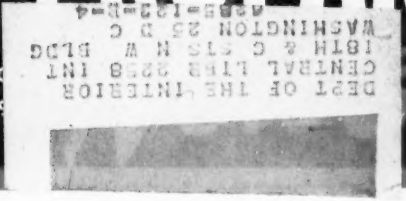
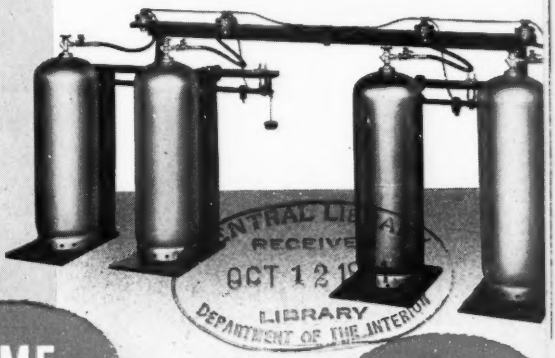
BUTANE-PROPANE

HEADQUARTERS FOR LP-G
INFORMATION SINCE 19



RONEY
AUTOMATIC
CYLINDER
CHARGING
(air or vapor controlled)



Saves

TIME

Eliminates "scale-watching" completely... hence frees operator for other work while cylinders are being filled. Note new Rockwood Ball-Type full-flow valves (quarter turn completely opens or closes) in individual cylinder lines.

FUEL

Automatically prevents cylinder overfilling (contents within 2 ounces)... and completely does away with wasteful, dangerous venting of fuel.

MONEY

By eliminating costly fuel-venting and by reducing "operator-time," RONEY Automatic Cylinder Charging means cash savings for YOU!

vert to RONEY now!

ual stations can be con-ed easily and at low with Roney No. 1263 rol Valve and Roney Valve.

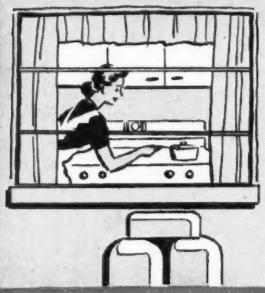
e for *descriptive literature and details.*

RONEY INC. • 105 COLE ST. • DALLAS, TEXAS

WEST COAST HEADQUARTERS: 5931 Van Ness Avenue, Los Angeles, Cali

invisible rays
guard weld quality

—HERE→



to assure a
better Hackney Cylinder

←THERE—

You LP-Gas operators are assured an *extra good* Hackney Cylinder . . . because of the *extra* precautions Pressed Steel Tank Company takes at its plant. For instance, X-ray control welding is one of the design and manufacturing steps building superb quality into Hackney Cylinders.

The X-ray machine (shown above) watches over the quality of Pressed Steel Tank Company welding. As a result, a better welding technique is assured—meaning stronger and more uniform welds.

It's part of the skill that goes into Hackney Cylinders. Skill in modern manufacturing . . . skill in designing . . . skill that's backed by almost 50 years of experience in the design and manufacture of compressed gas cylinders. No wonder Hackney Cylinders are preferred by LP-Gas dealers and distributors over all other cylinders by more than 2 to 1!

For full details on Hackney LP-Gas Cylinders, write us.

Pressed Steel Tank Company

Manufacturer of Hackney Products

Hackney
MILWAUKEE

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1399 Vanderbilt Concourse Bldg., New York 17
227 Hanna Bldg., Cleveland 15
936 W. Peachtree St., N.W., Room 112, Atlanta 3
208 S. LaSalle St., Room 790, Chicago 4
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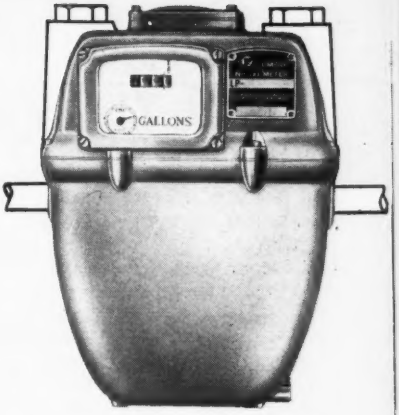
CONTAINERS FOR GASES, LIQUIDS AND SOLIDS

WITH THESE COMPACT LP-GAS METERS

you're really in the GAS BUSINESS



Furnished with ½" or ¾" side and top female pipe thread connections. Meter dimensions 8" x 7½" x 10¼". Weight only 9½ lb.

Meters identify your business with the gas business. Your customers and potential customers are already sold on meters. They don't quibble over meter readings as they may gauge readings. Meters are *more accurate.* They stop errors that cost you money. Too, they effect many economies. For example, with meters you can pipe several services from a single tank; schedule truck deliveries to suit your convenience. Metered service is a strong selling point for new customers. With meters you offer your customers a more complete service with greater economies for you. In today's competitive fuel market, can you afford to be without them?

ROCKWELL NO. 00 LP-GAS METERS

ROCKWELL MANUFACTURING CO.

Pittsburgh 8, Pa.

Atlanta Boston Chicago Columbus Houston
Kansas City Los Angeles New York Pittsburgh

ECONOMICAL TO BUY, SAFE TO USE

The Rockwell No. 00 is especially designed to measure LP-gas from bottle gas sets, storage tanks and distribution systems. Made with strong, pressure cast aluminum alloy case, good for 5 lb working pressure. Meter won't rust, is corrosion-resistant and can be exposed to the elements. Built for long life. Accurate from pilot light to 80 cfh. *Write for bulletin C 5100*

A CINCH TO MAINTAIN

After years of service, you can recondition your meters for another extended period by simply installing new or factory rebuilt measuring units in the bowl type body. A screw driver is the one and only tool required.

OCTOBER, 1951

BUTANE-PROPANE News

ABC ECA

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Letters

HEADQUARTERS FOR LP-GAS INFORMATION SINCE 1931

TEXAS

We service LPG storage tanks located over the territory on irrigation wells. These tanks hold 1000 water gallons and have percentage liquid level gauges.

We would like to determine whether or not some of these tanks measure right; that is, according to our truck delivery tank we pump in more gallons that the gauges register. If we weigh our gas and use temperature charts, just how are we to determine the temperature, or would you suggest any other method? We cannot use meter. The trouble is either in the gauges or the size of the tank.

W.H.E.

There are several items that may affect the balancing of fuel quantity measurements between the storage tanks and your delivery truck tank. Some are as follows:

1. Do you use a vapor return? If not, then space occupied by the liquid pumped from your truck must be replaced by vapor evaporated from the liquid volume. Even if a vapor return is used there may be a few gallons variation.

2. Do the tanks hold exactly 1000 gals. water capacity? Have you positive information to prove that they do? Many so-called 1000-gal. tanks actually have a greater capacity than 1000 gals.

3. Are accurate capacity tables available? Due to curvature of the heads, and other minor irregularities, the exact gallons of liquid in the storage vessel cannot be accurately determined by merely multiplying water capacity by the percent reading.

4. Your gauge indicates liquid capacity by a float which moves a permanent magnet. The magnetized magnet in turn revolves a magnetized pointer. Although these gauges are quite accurate, there is always the possibility that the pointer either lags or leads the magnet slightly. It is also difficult to read a percent of gauge accurately to fractional percentage figures.

5. Variations between the liquid temperature in the truck tank and that in the storage tanks will cause variation.

6. Some of the above items will also apply to your truck tank.

If your trucktank does not have a thermometer well it will not be possible to make an accurate temperature determination. However, if there is a thermometer well, then the temperatures can be determined by inserting a good quality laboratory thermometer with steel guard in the thermometer well for a few minutes, then reading it. Check readings should be made.

After the temperature is determined the pounds per gallon can be determined by referring to the Handbook Butane-Propane Gases, Fig. 7, p. 46 ("Weight per gallon of propane, isobutane and normal butane").—Ed.

●

MISSOURI

We wish to change over our 1950 Model 450 GMC truck to burn propane. This truck has 270 cu. in displacement.

How much can we plane the head to raise the compression to the highest satisfactory performance?

H.P.

According to our records, this engine already has a compression ratio of 6.75 to 1, which is fairly high, and we would recommend that you do not change this unless you must have more power. In such an event, do not mill off more than .064 in.

I believe this is an L-head type engine and therefore high altitude pistons cannot be used.—Ed.

●

MASSACHUSETTS

We have in operation a propane air gas plant producing a mixture of 850 Btu's which we are supplying the city.

Some time late this fall or early spring we expect that natural gas will be available for us. The natural gas will be coming in to our mains at 1020 Btu and inasmuch as we have only recently converted the city to

propane-air mix of 850, the writer is interested to know if it would be possible to mix the natural gas at the point of entrance at our mains to a Btu which would be equivalent to our 850 propane-air mix. The thought being if this could be done we could eliminate a second conversion of the city in three years. The pressure that we are using now is 6".

H.E.G

Propane can be mixed with natural gas to obtain a replaceable product for the 850 mixture but would require adjustment of most appliances for satisfactory service. It would seem like it might be better to convert to propane.—Ed.

●

INDIANA

We are operating our 1½-ton Dodge truck on propane gas and have a 1-2 or 4 100-lb. hook up on vapor.

Our equipment will handle liquid by putting liquid dips in the tanks.

We are wondering if we can run all winter on vapor. At what temperature will a 100-lb. tank completely vaporize?

E.E.T.

It is possible that you will be able to operate all winter with the equipment you mention. However, this is dependent upon many factors which include weather conditions, load and continuity of heavy load, amount of fuel in cylinders, etc.

A 100-lb. tank of propane will continue to vaporize until all the liquid is converted to vapor. The rate of vaporization, however, becomes progressively slower as the quantity of liquid in the tank reduces. If vapor is withdrawn too fast then a balance will eventually be reached where no more liquid will vaporize until sufficient heat is transmitted to the liquid to warm it again.

The "Handbook Butane-Propane Gases" discusses vaporization from tanks and steel cylinders, and a table on p. 135 gives calculated rates of vaporization in 100-lb. cylinders in perfectly dry, still air. —Ed.

●

PENNSYLVANIA

I am having some difficulty in convincing myself of the proper method of arriving at the cost of propane pumped into 100-lb. cylinders and placed upon the dock ready for delivery.

Knowing the cost of gas laid in at the bulk plant in a tank car or tank truck, what is the proper procedure in figuring the cost of filling a 100-lb. cylinder. Has anyone come up with a simple formula or factor which may be used for arriving at this cost?

P.A.J.

There is no simple formula that we know of to figure the cost of filling 100-lb. cylinders. It will depend on the system which you have for doing this work and to some extent on the quantity.

Some of the items which must be included are:

1. Labor for filling.
2. Power for pumping and lighting.
3. Loss of fuel in making and breaking connections (if any).
4. Maintenance of filling equipment.
5. Records (labor and office supplies).

The above items are those covering the actual filling, but other items which go into the overall cost of supplying fuel in cylinders and which should be considered in the cost of supplying gas in bottles follow:

1. Repairs and maintenance of cylinders, including painting.
2. Distribution supplies and expenses.
3. Amortization of cylinders, docks, servicing, equipment, etc.
4. Gratuitious work on customers' premises.
5. Commissions (if any).
6. Office and management (salaries and supplies).

From the above it is readily seen that no simple solution is available, but all the costs which enter into the filling of the cylinders must be carefully weighed and evaluated. This is why good cost records are valuable to the successful operation of a business.—Ed.

●

MISSOURI

When the maximum Btu rating is known for each building, and the distance the pipe would have to run using a high pressure system (5 lbs. to 25 lbs.), is there a formula or way that the proper size of pipe and pressure can be determined?

Occasionally we have several buildings to pipe from one tank (propane gas), and the buildings are too far apart to run low pressure lines (11 in. water column), so by running the high pressure lines and reducing at the buildings to operating pressure with second stage regulators, we find

it is best. But I have not been able to find information telling the method to figure the pipe size.

If there is a formula or way to figure it, I would appreciate your help on it. If it is very complicated, you had better explain it a little, as I find some figuring a little difficult.

W.C.S.

There are several formulas, all similar, that can be used for calculating high pressure system line losses and pipe sizes. However, all of them require considerable calculation or the use of special tables. The 1951 printing of the Handbook Butane-Propane Gases has tables, pp. 316 & 317, for determining pipe and copper tube sizes for both high and low pressure systems.

In determining pipe length, allowance should be added for elbows, tees, valves, etc., as recommended in Table 1 of Part 8, Appendix, Section 3.

The formula used in preparing Table 4 for high pressure LP-Gas lines which is mentioned above was Weymouth's formula, which requires special tables for certain figures when it is used.—Ed.

●

WASHINGTON

We have two Onan light plants with four cycle L-head, 6 cylinders, 3 5/16 bore, 4⅜ stroke, 226.0 cu. in. piston displacement, 6.0:1 compression ratio, maximum horsepower rating 54.2 at 1800 rpm., Continental F-226 engines. These two engines came with vapor hookup.

We want to know if a 500-gal. propane tank will vaporize fast enough to take care of the load when the outside temperature drops to 0 degrees?

There also will be 18 gas brooders drawing from the same tank. The run to the motors is about 30 ft. and we are planning on running ¾ in. pipe. Will that be satisfactory?

D.V.

We do not think the 500-gal. tank will be adequate to supply vapor to the two Onan engines and the 18 gas brooders at 0 degrees. The two engines will draw nearly 11 gals. per hour and the 18 brooders will use nearly 1½ to 3 gals. per hour additional (depending on their size). We suggest liquid withdrawal to heat exchangers installed in the engines.—Ed.

●

MONTANA

Could you refer us to a company that manufactures or sells various size "No Smoking" signs suitable for use around propane plants?

We are also interested in securing tank car unloading signs.

E.P.S.

It is common practice for firms to have stencils cut with the words they want to use and make their own signs. Permanent signs can be made on metal this way and serve long periods of time. Nearly every town has a sign painter who can cut stencils. —Ed.

●

SOUTH CAROLINA

We have a customer who has a flame weeder that is not being used for cultivating and would like to use these burners if possible in connection with grain drying plant. Specifications call for burner with 1,000,000 Btu input. Do you think such burners would serve the purpose? If so, could you suggest hook up with 100% safety pilot and thermostat control?

J.L.P.

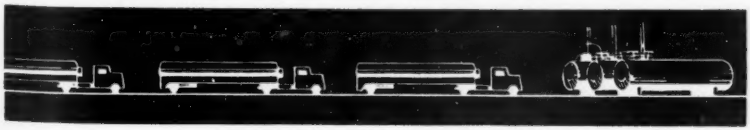
We believe these burners are designed and built to use 15 to 40 lb. gas pressure in order to get the necessary "drive" needed in the flame to penetrate to the weeds.

Generally, valves built for 100% safety shutoff cannot operate under such high pressures.

If the pressure to the burner does not exceed 1 lb., then safety shutoff devices may be used.

The important thing to remember in these safety shutoff devices is that they are built for low pressure, under 1 lb., and will not stand high pressures.—Ed.

● **BUTANE-PROPANE NEWS welcomes letters from our readers, but it must be understood that this magazine does not necessarily concur in opinions expressed by them.—Editor.**



Stanolind LP GAS
EVERY GALLON "ON SPEC" — because every gallon is scientifically tested prior to shipment . . . another reason — why you can rely on . . .
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LP-Gas Sales Section — P. O. Box 591 — Tulsa, Oklahoma
MEMBER
national LP-GAS PROMOTIONAL program

Comment

SECRETARY of the Interior Oscar L. Chapman has again advised consumers and distributors of liquefied petroleum gas to fill their storage tanks during the summer and early fall so as to avoid spot shortages in winter.

This information comes from Alton S. Lutz, recently appointed by PAD as assistant to the director of natural gas production and processing.

Overall supplies of liquefied petroleum gas are adequate to meet all demands, including increasing use on the part of steel companies and other industries, Mr. Chapman said.

But material shortages have impeded production of new pressure tank cars for transporting this type of fuel, and of facilities for storing it, he said.

As a result, he said, local shortages are expected to develop during peak periods next winter, as they did last winter.

In similar vein, the Liquefied Petroleum Gas Commission of Louisiana has urged the users, themselves, to cooperate by sanctioning the filling of their consumer tanks early this fall to ease storage and transportation problems.

●

Approval of plans for a broad-gauge educational campaign to prevent winter shortages of LP-Gas highlighted a meeting held in St. Louis recently. An industry-wide training program was also launched.

The plan was adopted to stimulate advance storage of liquefied petroleum gas during off-peak months. It resulted from an exhaustive study recently completed by the LP-Gas Information Service of the LPGA.

Practical information on the subject both at the consumer and industry level will be provided. Included in the educational campaign will be informational talks at intra-industry conventions and meetings, basic data to be made available for dealer use in recommending adequate storage facilities for their customers and dealer advertising aids to sell the public on the importance of installing proper sizes of tanks and cylinders.

The employe training activity approved at the meeting will provide marketers and their employes with training and educational materials designed to help them improve their selling techniques and provide better service to customers.

●

It seems likely that within a few weeks the competitive advantage that diesel fuel has enjoyed over gasoline and LPG for highway use will be abolished. In the past, diesel fuel has been exempt from the Federal excise tax which has been collected on other fuels.

The Senate finance committee has approved a provision of the House-endorsed revenue bill levying a comparable tax on diesel fuel, and has also concurred with the House in raising the excise levy on motor fuels from 1½ cents per gallon to 2 cents.

●

The "Old Stove Round-Up," in which 800 gas utilities, 62 gas range

manufacturers and 40,000 gas appliance dealers are uniting to hunt down and corral outmoded cooking appliances, is being staged from Sept. 3 to Nov. 30 by the American Gas Assn. and the Gas Appliance Manufacturers Assn. Local Round-Ups will run for six-week periods during the three months.

This powerful promotion offers a positive approach to solving the problem of currently retarded sales and is having the cooperation of many LPG dealers.

•

The National Board of Fire Underwriters reports that persons in the age group of 15 to 25 years are the most cautious with fire. Perhaps that statement will make the "oldsters" be more safety conscious.

There aren't enough "No Smoking" signs for all the places where they are needed. Therefore, it is up to each of us to see that safety is exercised. Fire hurts everybody.

"Chewing tobacco is a filthy habit, but it never started a forest fire!"

•

Freedom is the one thing the oil industry must have if the progress of people through petroleum is to continue, Dr. Robert E. Wilson chairman of the board of Standard Oil Co. (Indiana) declared in Tulsa, recently.

There must be "freedom to explore where we will, freedom to conduct our research, freedom to seek capital and build plants and facilities, freedom to earn profits with which to finance expansion and maintain our credit," he said.

"We must," he added, "even treasure the freedom to go broke, or how will we get rid of the inefficient and those who do not serve the public well?"

He might well have been talking to butane-propane dealers specifically, for the business activities of this group are typically American. And that includes the said right to go broke, as a few operators have unfortunately found out.

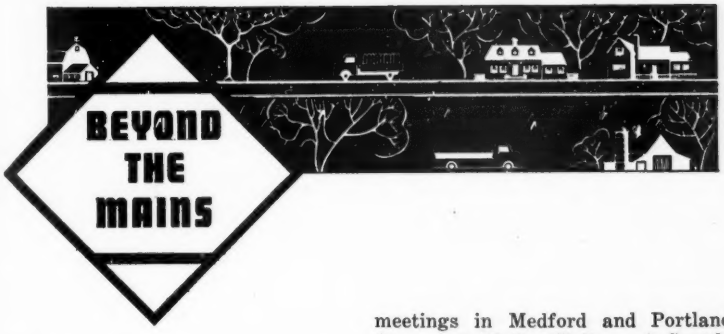
But they could also start up again, full of hope—and with more experience than before!

•

Regardless of the use of advertising, nothing replaces a good, reliable reputation. Advertising, wisely used, can create interest, bringing the customer in the door, but it is the service and workmanship of the dealer that creates a favorable impression. Advertising and reputation supplement one another.

There are many ways in which the dealer may keep his product in the public eye at little cost to himself.

The promotional field embraces such service activities as the sponsorship of cooking classes, explaining the function of LP-Gas and its varied operations, at farm center meetings, demonstrating appliances at church, school, picnic and county fair functions, sponsoring public parties at which appliances are demonstrated and sold, displays in the community bank, and technical explanation of LP-Gas products for civic groups such as firemen, police and city employes.



THE forerunner of year-round fire prevention, Fire Prevention Week, will be Oct. 7-13. Throughout the country organizations of all types—civic, industrial, etc.—will take part in the program.

Butane-propane dealers should take advantage of the national campaign by not only taking part in the civic demonstrations, but by holding special safety and fire prevention programs within their own organizations.

The National Board of Fire Underwriters, 85 John St., New York, has fire prevention campaign and speech material available for the week and inquiries should be addressed to the board for special information.

•

A new, unified effort in the gas industry in the Northwest and other points on the Pacific Coast was predicted by Frank N. Seitz, general chairman of the sales and advertising section of the Pacific Coast Gas Assn. and manager of sales for Southern Counties Gas Co. of California, as a result of a series of meetings in September of gas utility representatives and liquefied petroleum gas dealers in Oregon and Washington.

A sales team, representing the PCGA, the LPGA and appliance manufacturers, conducted a series of meetings in Medford and Portland, Ore., and Walla Walla and Seattle, Wash., which drew representatives from gas utilities and LP-Gas dealers throughout the Northwest.

"It seemed ideal to coordinate the sales activities of the two groups with the Old Stove Round Up," Mr. Seitz stated, "because ranges are usually the first appliance that goes into a home and alert salesmen can do a more effective selling job through combination sales."

Mr. Seitz pointed out that previously there were blank spots in the Northwest area served by utility companies and that the two groups are now closing up the gaps with the inclusion of the LP-Gas dealers in the "Round Up" program.

Gas-Fired Turtles

E. Roy Taylor, president of Gas, Inc., Fairburn, Ga., was awakened from a sound sleep one night recently by a phone call. The company's agent at Conyers, Ga., after the usual middle-of-the-night amenities, said, "One of our customers has a shipment of turtles slated to arrive from Florida tomorrow—we gotta have heat before they get here—and what would you suggest for a 6-by-8-foot-room-with-cement-floor-and-shallow-pool?"

My Taylor informed his caller of the zoological truism that "The Good Lord provides that turtles go into the mud

in winter time and stay there until warm weather arrives."

"This is no joke," the agent replied, with a fine disregard for the sleeping habits of gas company executives, "the turtles are of very valuable racing stock."

It was Mr. Taylor's strict adherence to the gas man's creed of unfailing and unflagging service through wind, sleet and snow and—curiosity—that put the machinery into operation.

By the time the turtles arrived the next day a Clow gas-steam radiator was in operation, controlled by a Robertshaw thermostat. A copper line from the radiator's water supply was routed to the pool and the valve "cracked open" just enough to replenish evaporation losses.

It must have been the most elaborate setup the little speedsters had ever encountered, My Taylor says, because they made a clean sweep of all competition at the track. He describes the latter as a table equipped with lanes, around which the LP-Gas-fired turtles sped. "But if you have heart trouble, don't try to pull a winner home," he advises. "The speed is strictly comparative."

However, it was a new use for LP-Gas.

•

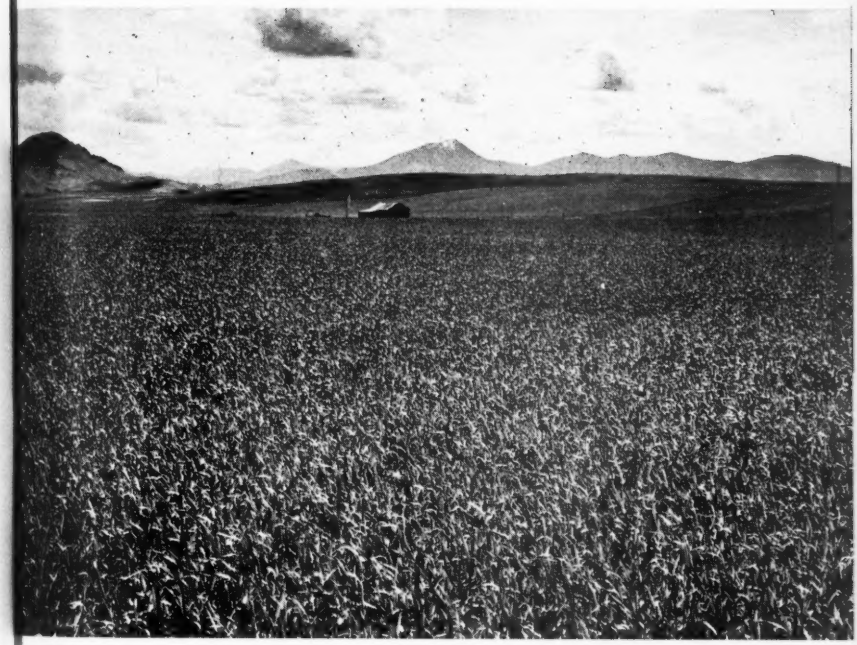
The official opening of a new two-story addition to the American Gas Assn. Laboratories at Cleveland in August marked another forward step in a voluntary program of protection for the gas industry and its customers that was launched more than 25 years ago.

Under that program nearly 35,000 different models of gas appliances have undergone rigid tests at the AGA Laboratories to assure customers those appliances are safe, durable and efficient. Manufacturers of gas appliances have contributed more than $4,000,000 in service costs for these tests. Inspectors have traveled over 150,000 miles each year making field tests to make sure that all appliances produced and sold bearing the Laboratories Seal of Approval, meet the American Standards requirements established for these appliances.

The opening of the new building nearly doubled the floor space of the Laboratories in Cleveland. It represents the third expansion of this unit since the founding of the Laboratories in Cleveland in 1925. A West Coast branch was opened in Los Angeles in 1930 and this branch also has been expanded several times.

Over 95% of all gas appliances marketed today are models which have been tested and approved in accordance with American Standards Approval Requirements. Testing services are performed on more than 4000 models of gas appliances annually. The continuing increase in the number of gas appliances submitted for tests necessitated the construction of the new extension of the Laboratories.

Edwin L. Hall is director of the Cleveland Laboratories and W. H. Vogan supervises the West Coast branch.



As The Weather Goes So Go LP-Gas Sales In Montana

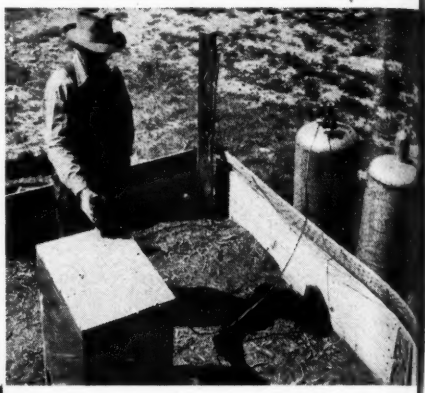
By Dale Molen

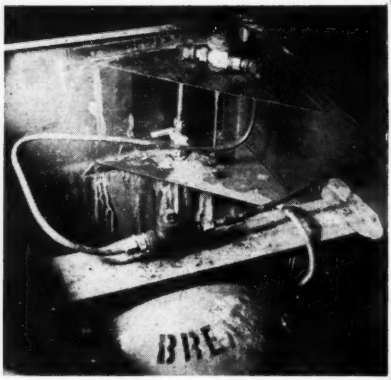
ACROSS 27 million acres of northern Montana, from the Rocky Mountains to the North Dakota border, 30 generators fired by propane send rain-making silver iodide crystals skyward.

They laughed at Columbus—doubters and belitters can find little comfort in the fact that this year's average rainfall in the region has been above normal.

Precipitation Engineers, Inc., Shelby, Mont., operated by two young meteorologists, Cliff Olson and Bob Taylor, is in business as long as the

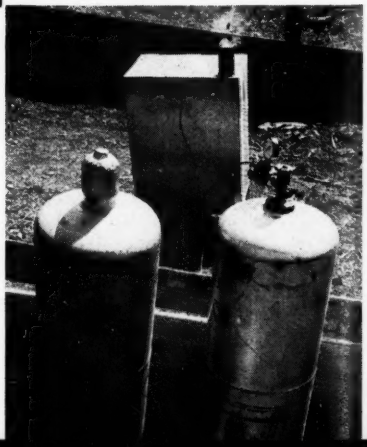
Many precipitation engineers use coke. The Montana operators are sold on LP-Gas. Its cleanliness and efficiency make it ideal for cloud seeding operations. Principal maintenance is keeping burner clean. Silver iodide crystals occasionally clog burner. Line from propane cylinder to generator seldom needs cleaning. John Davison checks condition of the burner in the generator in his chicken coop in the small north central Montana farming town of Highwood.





Interior mechanism of cloud seeding generator. Silver iodide and acetone are mixed in small tank in foreground, the acetone dissolving the iodide. Pressure from propane gas tank forces solution into mixing line and up to burner where propane heat vaporizes silver iodide and pushes the crystals out into the air currents which carry them to clouds.

Two 100-lb. cylinders of propane gas are necessary for each of the 30 generators of Precipitation Engineers, Inc., for long, continuous cloud seeding. The company plans to add an additional spare tank to each unit. Tanks, containing about 24 gals., will last about 24 hours generally. Pressure of 10 lbs. is maintained to keep heat at 2500° level needed to vaporize silver iodide crystals in cloud seeding.

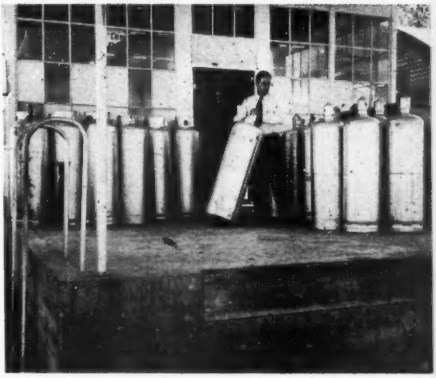


rain falls and Montana farmers sign on the dotted line.

Meanwhile, the George Steele Co., Inc., Great Falls, and the Glacier Gas Co., Shelby, are cashing in on the experiment.

The mechanical phase of seeding clouds is simple. Silver iodide and acetone are mixed in a small tank, enclosed in a stove-like container. The acetone dissolves the silver iodide crystals. Pressure from a 100-lb. cylinder of propane gas then forces this solution into a mixing tube and up to a burner where propane heat vaporizes the silver iodide and pushes it out into the air currents. Propane provides the 10 lbs. constant pressure to force the solution into the mixing tube, and the 2500° of heat needed to vaporize the silved iodide.

Dealers have no distribution problems in this operation. Precipitation Engineer trucks pick up the bottled propane from the dealer closest to the generators which need refueling, and make their own deliveries.



One-hundred-lb. propane cylinders at Great Falls, Mont., ready for delivery for the rain-increasing project. The company has plants at Billings, Lewistown, Hamilton, and Butte, and dealers in nearly every town in the state.

Loading propane for distribution from the home plant of George Steele Co., Inc., at Great Falls. Tanker is 1700-gal. capacity. The company grew up with bottled gas and expects to top 2,000,000 gals. of propane this year.

The 100-lb. cylinder, containing about 24 gals. of propane, will last about 24 hours of operation, depending on temperatures of the varied localities. Tanks located at the fringe of the mountainous Glacier Park country seldom last 24 hours and more often are emptied in about 18 hours because of the lower temperature.

In May of this year Precipitation Engineers used 7000 gals. of propane. In June they expected to increase their consumption to between 8000 and 9000 gals.

Generators during one June storm ran 70 hours consecutively and servicemen for Precipitation Engineers were busy day and night. One delivery truck covered more than 500 miles of country roads in a day!

As the weather goes, so go LP-Gas sales in Montana.

Side view of showroom and trucks of Acme Butane & Appliances, Fresno, Calif.

By CARL ABELL

How to Sell, Service and Collect

THE best reason for selling appliances is to sell gas. So say Gus and Henry Haar, partners in Acme Butane and Appliances, of Fresno, who have one of the most attractive and best stocked appliance stores in California's San Joaquin valley.

The Haar brothers have built their business — and it is a very profitable one — around domestic appliance sales. They have none, and want none, of the big volume, highly competitive, low margin industrial loads which are all around them.

The San Joaquin valley is unique in the LP-Gas business. With large sources of supply in the south end and the west side of the valley, this area became one of the earliest and most highly developed markets in

Good Public Relations and Constant Supervision give Dealers Edge on Competition

America. It has also become highly competitive.

Before World War II there were already at least a dozen distributors competing for the business within the area served by Acme Butane and Appliances. The region has been prosperous, and most of the customers in the valley have bought and installed their own individual bulk storage tanks. Service in ICC containers is now comparatively rare.

During the postwar years, natural gas pipe lines have been extended to a number of the local communities which formerly offered rich concentrated markets for liquefied gas distributors. But in spite of the heavy competition and the encroaching utility, it has been possible for this new company, established in June, 1946, to grow and prosper. The proprietors credit an aggressive and sustained appliance sales program for much of their progress.

They admit that they had a lucky break shortly after they started Acme Butane and Appliances. With new competition in the picture, the old timers started a move to merge all of the established distributorships into a single company. The week after the plans for the merger were announced in the papers, the price of LP-Gas went up 3 cents per gallon. The customers did not realize that this was a readjustment following the relaxation of the severe wartime controls.

The timing in relation to the merger was too perfect. Enraged farmers came in droves to the one available independent distributor, and the Acme business was soon "over the hump." Within six months after the organization of Acme Butane, it was necessary for them to add a second delivery unit, and a third truck was added by the end of the first year.

These trucks are all identical, are kept well painted and are cleaned regularly. Covering routes extending for a radius of 50 miles up and down the valley, and 20 miles on both sides of Highway 99, crisscrossing the routes of a dozen competitors' trucks, they give the appearance of a much larger operation than actually exists.

The first office of the company was in a rented warehouse. It had no sides, and not very much roof. Office equipment consisted of a $5 desk, a telephone, a wooden box

Gus and Henry Haar, partners in Acme Butane and Appliances.

for a chair, and a file box for the customer information and accounts. Gus handled the office end of the business, while Henry drove the first delivery truck, serviced the customers' appliances, made outside sales calls, and installed new appliances and equipment as the need arose. In the course of a few months, working nights and Sundays, the brothers managed to complete the walling-in of their quarters, and installed a small stock of appliances.

Planned for Gas Load

Both of the Haar brothers had previously been engaged in the LP-Gas industry as employes and managers of other concerns. Their experience indicated that the sale of gas for domestic use constituted the most profitable end of the business, and it was on this phase that they concentrated their efforts.

The sale of gas for domestic use necessitated the servicing of customers' appliances, and these service visits inside the homes led to opportunities to replace many worn-out and obsolete stoves, water heaters, and other gas-consuming units. The increased consumption which followed the addition of extra appliances cut the unit cost of delivering fuel.

Growth of population in the area, and the construction of many new rural and suburban homes, opened up other prospects for the sale of appliances and gas. Drivers were trained to watch for and report new prospects, and the partners found that they were getting more deeply involved in the appliance business. They needed more space, and better facilities for display. Arrangements were made with the landlord to construct an office and showroom on the front of the lot next to the highway. This was completed in 1948. It is well located on the main highway through the San Joaquin valley, in an attractive district on the north edge of Fresno. The good location, and the attractive display through the ample windows of the showroom, have attracted many new customers.

The selection of appliances is planned to meet the requirements of homes and incomes of every size, and the emphasis is on established brands having wide popular acceptance.

Electricity's Most Vulnerable Spot

Electricity offers very strong competition in the Valley, both on account of a low kilowatt rate, and the aggressive sales efforts by the power company. The Haar brothers consider that the best defense against electric inroads is an equally aggressive sales policy on both equipment and gas. Their greatest sales effort is beamed at the domestic water heater — the spot where electric competition is most vulnerable, and where the sale of gas equipment is the easiest.

Other appliances are not neglected. They want all the volume possible through every customer's tank, so they work hard to serve all of the householder's needs for domestic fuel. The importance of this is shown by an analysis of a large number of customer accounts. The average annual consumption

by the various appliances in these homes is as follows:

Water heater	300 gallons
Kitchen range	180 gallons
House heating	900 gallons

Quick freeze cabinets and gas refrigerators add a desirable sales volume for gas, but this business is much more difficult to take away from the electric company, which is backed up by the many special appliance stores and the furniture and department stores which also sell appliances. Gus Haar believes that if his company can install the water heater, the chances of selling the house heating load are excellent, and if both of these uses can be secured, electric competition for the kitchen range can be overcome with minimum effort.

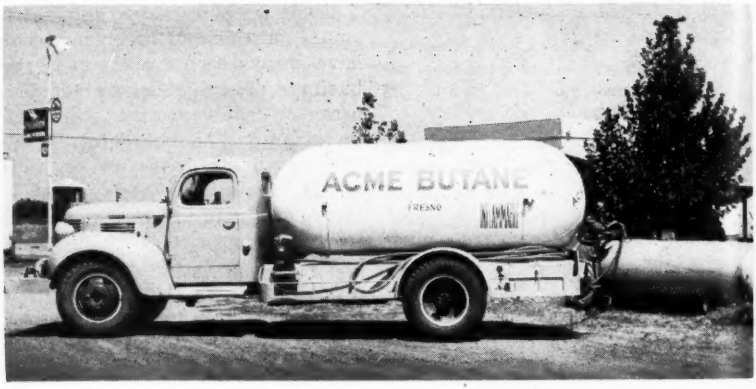
Rates on Acme's fuel are based on average use, the lowest rate being given to customers who consume the highest amounts. This makes it especially advantageous for customers to cook, heat water, operate the house heating system, and refrigerate with gas. They bring this out forcefully in endeavoring to sell the complete line-up of home appliances which can be operated on gas.

"ACCOUNTS RECEIVABLE" REDUCED $5000. That's what this small distributor accomplished by developing a diplomatic method of collecting at the time of delivery. Do you have a method which works equally well for you? Will you tell us about it?—Editor.

Trade-ins of used gas appliances on the purchase of new equipment have always been a problem in the business. They cannot be avoided, because some competitor will make an offer for the old unit. Acme handles the trade-ins on an individual appraisal basis. Either Henry or Gus inspects each one, and estimates the price at which it can be resold. The less prosperous class of customers in the area offer a good market for used equipment.

Two-thirds of the estimated resale value of the old appliance is offered unless it is in unsalable condition. In such case, a nominal allowance of from $5 to $10 is made, except when the new appliance purchase is of a very low value. The company will not cut the price to make a sale Time payment financing of appliance sales is necessary in a high percentage of cases. For the first four years, while the operating capital was building up, Acme used a bank financing plan on appliance sales contracts. The company has now progressed to the point where it is able to finance the sales contract with its own capital, which adds the financing profit to its resources.

The volume of appliance installations and service work involved in taking care of the company's present 1500 customers requires the full time of a service expert. In order to keep his schedule from becoming too heavy, the drivers are trained to make minor adjustments and to do the more common jobs of quick trouble shooting. From



Acme delivery trucks are kept well painted and immaculate.

these various jobs inside the customers' homes, a great many opportunities to install new appliances have developed.

The sale of appliances is handled by either Gus or Henry Haar. When a prospect for a new appliance is located, the effort is made to have him visit the showroom. If this fails, one of the brothers visits the prospect. Leads are secured from various sources, but the greatest source is the reports of the drivers and the servicemen. These receive no extra pay for reporting such prospects. Their base pay is high for this type of work, and it is clearly understood that turning in prospects' names is one of their regular duties.

Last year a full time appliance salesman was kept on the staff. His sales volume was satisfactory, and his work resulted in securing a reasonable number of new accounts. But the direct sales expense, and the promotional expense necessary to keep the salesman supplied with leads, ate up the profit. In commenting on this, Gus Haar states that the use of special appliance salesmen would no doubt be necessary and profitable in larger LP-Gas distributing companies, but that the way the Acme Butane and Appliance is set up, the expense of the specialty salesman is not justified. In addition, the personal contact between the management and the customers appears to be an advantage in making sales and keeping customers.

The extension of the natural gas utility system in the Fresno suburban area and in many of the outlying towns has presented a serious problem to all of the local LP-Gas distributors. During the five years

•of Acme's operation, they have lost about 1500 customers to natural gas.

This situation has not been without a related benefit, however. The replacement of LP-Gas with natural gas has made a great many domestic bulk storage tanks available at reasonable prices on the second hand market. Customers are able to secure their own bulk storage facilities at low cost, which permits more of them to take advantage of the savings possible from bulk deliveries. This widespread ownership of tanks is one of the principal reasons why bottled gas installations are comparatively rare in the San Joaquin valley. The low cost of bulk fuel is also a potent defense against the inroads of the power company.

Acme Butane does not handle any gas in ICC containers. With all customers taking deliveries in bulk, it is possible to lay out delivery routes and schedules on a basis of one delivery approximately every two weeks. Emergency deliveries are seldom required, but they are made promptly when needed.

The division of duties and responsibilities between the two brothers is so arranged that Gus still spends most of his time in the office. Besides doing the bulk of the inside selling, he supervises the accounting, passes on all credits, and is responsible for collections and buying. Henry handles the

Well located, with plenty of window space, the Acme display attracts many customers.

"outside" end of the business, which includes maintenance of equipment, supervision of deliveries and service, outside sales calls, and relations with the public and the industry. He is active in the Liquefied Petroleum Gas Assn., and is currently chairman of its educational committee for District 2.

The rest of the organization has been selected and trained with great care. The men get top pay on a year-round basis, which makes it possible to secure and retain the best available help. When a new driver is hired, Henry Haar rides and works with him for at least three weeks to make sure that he understands all phases of his work. Particular attention is paid to safety, customer relations, and the development of leads for the sale of extra gas-consuming appliances.

Driver Kept Informed

This personal attention to new employes establishes a close working relationship between management and drivers, which is never allowed to lapse. Gus Haar plans the route for each driver every day. The account card for each customer who is to receive gas on that day is examined to find out if payment is due for any past deliveries. The driver takes the cards for the day's deliveries, and when he talks with each customer he knows the exact status of that person's account.

Considering that the accounts receivable were higher than was desirable, a careful check-up on delivery procedure was recently made. It was found that the drivers, being human and inclined to take the easiest way, would almost always hand the completed delivery ticket and a pencil to the customer. This made it too easy for the customer to sign the slip and have the delivery charged on a monthly account. After a careful study to evolve an effective and inoffensive method of asking for the money, the following procedure was adopted:

Asks for Payment

The driver completes the ticket, showing the amount due for the day's delivery, and puts his pencil in his pocket. Then he says to the customer, "This delivery is $5.22 (or whatever the amount may be). Would you like to pay for it today?" The money is forthcoming in the majority of cases. If the customer does not have the money on hand, or if he says he prefers to have the delivery put on his account, it is perfectly all right. Out comes the pencil, the customer signs the delivery receipt, and the amount goes on the company books.

In case the customer's card shows an unpaid previous item, the driver shows it to the customer, and asks, "Do you want to take care of this previous charge today?" Many times, when the current delivery is charged, the customer pays the previous items.

When this plan was evolved, Henry Haar went out for two or three days with each driver, to show them exactly how the management wanted the request for cash payments to be handled. To make

the program more effective, it was decided to pay the driver a bonus of 10 cents for each cash collection made, whether it covered the current delivery or one previously charged. The cost of this collection method has been insignificant, but the results are astonishing. With this diplomatic handling of collections, no loss of accounts has been reported.

Working Capital Increased

In the first 90 days of operation, this plan has reduced the accounts receivable by more than $5,000. This is equivalent to adding the same amount to the company's working capital. It has contributed materially to the company's ability to finance its own paper on appliance contracts.

Appliance sales by Acme have shown the following order of unit sales volume:

1. Water heaters.
2. Home heating appliances.
3. Cook stoves.
4. Refrigeration units.
5. Other domestic and commercial appliances.

Concentrating on appliances has produced an unbalanced load, with winter deliveries more than twice as high as those in the summer. Attention is now being paid to the development of various outlets for summer volume. Sales to very large accounts such as the chains of cotton gins stretching up and down the valley are not desired, as the price at which such business can be secured is not attractive, and such committments might interfere with domestic deliveries, which are the "bread and butter" of this particular company. Small power fuel accounts are desired, and they are working on tractor conversions cooperatively with the local LP-Gas carburetion agencies. In many cases their present domestic fuel customers are converting tractor engines to burn gas, which adds to the summer volume without opening up new accounts or requiring additional delivery stops. They are also serving a number of incubation and brooding operations, which fit nicely into the delivery program. Individually operated fruit dehydration plants are also providing desirable summer volume within the scope of the company's operations, and within the seasonal need. More of these accounts are being sought.

Resorts Offer Summer Load

Routes are being extended to take in some of the resort areas of the Sierra Nevada mountains, where deliveries are confined largely to the summer months, and where the company's practice of building gas business through the sale of appliances remains effective. The Haar brothers emphasize that the sale of appliances is self-supporting, but that due to competitive conditions the direct profits are not particularly attractive. Their real profits are made on the sale of gas, and as a means of increasing gas sales and defending themselves against the loss of customers, their aggressive appliance sales program has really paid off.

Domestic Use Still Leads Other Butane-Propane Applications

U. S. Bureau of Mines 1950 Report

THE 1950 report of the U. S. Bureau of Mines, prepared by A. T. Coumbe and I. F. Avery, released later than usual, shows a marketed production for last year of 3,482,567,000 gals., an overall gain of 22.8% over 1949's 2,836,599,000 gals. which, in turn, was an increase of but 3.9% over 1948.

Of this amount, domestic usage again led all other applications, with a total volume of 2,034,464,000 gals.—58.4% of the whole, and the highest figure ever attained. Domestic gain in 1949 was 25% with a consumption of 1,627,550,000 gals. representing 57.4% of that year's total usage.

The most remarkable spurt of sales in 1950 shows up in District 1, the states from Maine to Florida and to the eastern borders of Ohio, Tennessee, and Alabama. These deliveries were 57% over the 1949 total.

For internal combustion engine fuel, 129,818,000 gals. were sold, as compared to 77,981,000 gals. in 1949.

Extracts from Tables 1, 2, and 3 are revealing.

TABLE 1. SALES OF LP-GASES IN THE UNITED STATES
(Thousands of Gallons)

Year	Butane	% of Total	Propane	% of Total	Butane-Propane Mixture	% of Total	Total LP-Gas	Percent	Percent Increase
1949	488,801	17.2	1,403,359	49.5	944,439	33.3	2,836,599	100.0	3.6
1950	568,038	16.3	1,938,301	55.7	976,228	28.0	3,482,567	100.0	22.8

TABLE 2. TRENDS IN THE SALES OF LP-GASES BY PRINCIPAL USES
(Thousands of Gallons)

Year	Domestic	Chemical	Synthetic Rubber	Industrial	Gas Mfg.	Internal Combustion	All Other	Total
1949	1,627,550	544,886	177,850	162,197	239,210	77,981	6925	2,836,599
1950	2,034,464	612,468	228,485	217,078	251,694	129,818	8560	3,482,567

TABLE 3. RELATIVE RANK OF THE PRINCIPAL USES OF LP-GASES ON A PERCENTAGE BASIS

Year	Domestic	Chemical	Synthetic Rubber	Industrial	Gas Mfg.	Internal Combustion	All Other	Total
1949	57.4	19.2	6.3	5.7	8.4	2.7	0.3	100.0
1950	58.4	17.6	6.6	6.2	7.2	3.7	0.3	100.0

Gas Burner Operational Analysis Chart is Service Boon

THE purity, uniformity, and constant heating value of butane and propane are big selling points to economy-minded domestic users. To insure that customers are always able to prove these LP-Gas values for themselves, strict attention must be given to types of burners on appliances and their proper adjustment.

When installing or servicing a domestic appliance, a serviceman should always be instructed to check all burners to see that they are burning cleanly with a blue flame, and without soot or odor. All controls should be given a strict test to see that they are functioning efficiently.

The "Burner Operational Analysis Chart," first published in "Pyrofacts," publication of the Pyrofax Gas Co., Union Carbide and Carbon Corp., New York and appearing on the following pages of BUTANE-PROPANE *News* as Figs. 1, 2, 3 and 4, can be very helpful in reminding servicemen of what may be wrong in a faulty operation and how to correct it. Every dealer might well find it advisable to have all his servicemen equipped with copies of this chart.

Its purpose is to serve as a guide in determining causes of improper burner operation and in how to correct them. Specific details of technical problems arising from poor appliance performance should be solved by checking more detailed information — manufacturers' instructions, etc.

To use this chart, simply find the improper operating condition that fits the specific problem, and determine which of the several causes listed appear to have caused the difficulty. In the right hand column, suggested methods of correction are shown.

The chart will prove a valuable time-saver for servicemen who, with it, can spot the difficulty quicker, find the cause sooner, and repair it faster.

See Charts on following four pages ➤

Burner Operational Analysis Chart — Fig. 1

COMMON CAUSES OF IMPROPER BURNER OPERATION

POSSIBLE CAUSE	C-O-N-D-I-T-I-O-N-S																REMEDY
	SOOTING	YELLOW-TIPPED FLAME	LIFTING OR BLOWING FLAME	FLASH-BACK	BURNER POPS ON EXTINCTION	FLAME "FLOATS" AWAY FROM BURNER	BURNER WILL NOT LIGHT AT ALL	PUNGENT ODOR TO PRODUCTS OF COMBUSTION	ODOR OF GAS	FLAMES TOO LARGE	FLAMES TOO SMALL	UNEVEN FLAMES	SOME PORTS NOT LIGHTING	SLOW LIGHTING	DISCOLORATION OF FLAME	
Impingement of yellow or yellow-tip flame	X															Adjust burner or eliminate impingement
Too large a yellow flame	X															Reduce size of flame
Not enough primary air		X														Open air shutter wider
Too much primary air			X	X	X		X						X	X		Reduce air shutter opening
Not enough secondary air						X										See note (1) over
Gas pressure too high			X	X	X		X						X	X		See note (2) over
Gas pressure too low				X	X						X					See note (2) over
Gas orifice too large		X				X				X						Install smaller orifice
Gas orifice too small			X	X	X						X					Increase size of orifice
Dirt on orifice spud		X	X	X	X		X				X					Clean spud
Burr on orifice spud		X		X	X						X					Remove burr or ream new spud
Mis-alignment of orifice spud in burner		X										X	X	X		Straighten up gas cock, burner, etc.
Orifice drilled off center		X										X	X	X		Install new orifice spud
Excessive updraft around burner			X										X	X		Eliminate excessive draft
Down draft or back pressure around burner				X	X											Eliminate down draft
Burner ports too large				X	X					X						Install proper burner
Burner ports too small			X				X				X		X	X		Install proper burner
Poorly designed burner or mixer tube		X	X	X	X		X					X	X	X		Install proper burner
Obstruction in mixer tube or burner head		X		X	X		X				X	X				Remove obstruction
Burner ports plugged		X					X					X	X			Clean ports
Oil or grease on burner or heated surfaces	X							X							X	Remove oil or grease
Dust particles in atmosphere															X	Eliminate dust condition
Burner overheated				X	X											Check for proper burner design and installation
Lag in action of thermostat valve				X	X											Service or replace thermostat
Leak past closed thermostat valve				X	X				X							Clean valve seat or replace thermostat

Burner Operational Analysis Chart — Fig. 2

POSSIBLE CAUSE	C-O-M-B-I-T-I-O-N-S																REMEDY
	SOOTING	YELLOW-TIPPED FLAME	LIFTING OR BLOWING FLAME	FLASH-BACK	BURNER POPS ON EXTINCTION	FLAME "FLOATS" AWAY FROM BURNER	BURNER WILL NOT LIGHT AT ALL	PUNGENT ODOR TO PRODUCTS OF COMBUSTION	ODOR OF GAS	FLAMES TOO LARGE	FLAMES TOO SMALL	UNEVEN FLAMES	SOME PORTS NOT LIGHTING	SLOW LIGHTING	DISCOLORATION OF FLAME		
Lifting or blowing flame								X	X								See causes of lifting or blowing flame
Burning at orifice spud								X	X								See causes of flashback
"Floating" flame								X									See causes of "floating" flame
Some ports not lighting									X								See causes for ports not lighting

NOTE 1: - An insufficient supply of secondary air around the burner may be caused by:-

(a) Flue outlet vent(s) being too small or restricted.

(b) Air intake vent(s) being too small or restricted.

(c) Obstruction in flue outlet such as steel wool or so-called "gas-savers" which should never be used.

(d) Towels, pots, pans, etc. being placed over flue outlet.

(e) Down draft or back pressure against flue outlet. Make sure down draft diverter is installed.

(f) Burner affected by products of combustion from other burners.

(g) Excessive gas input for combustion space due to gas orifice being too large or gas pressure too high.

(h) Burner improperly positioned.

(i) Warpage of oven bottom or sides against burner or in path of flue gasses.

NOTE 2: - The standard service pressure for operating ordinary domestic and commercial appliances with liquefied petroleum gas is 11" w.c.

If the regulator lock-up pressure (line pressure with all burners and pilots turned off) exceeds 14" w.c. the regulator or regulators causing the high lock-up should be replaced.

If the line pressure is found to be less than 8" w.c. check for the following possible causes:-

(a) Gas lines or valves too small or obstructed.

(b) Insufficient amount of regulating equipment and/or cylinders installed.

(c) Regulating equipment unserviceable.

(d) "Freeze-up" or other obstruction in regulating equipment

Burner Operational Analysis Chart — Fig. 3

COMMON CAUSES OF PILOT OUTAGE AND SLOW OR IMPROPER PILOT-TO-MAIN-BURNER IGNITION

POSSIBLE CAUSE	C-O-N-D-I-T-I-O-N		REMEDY
	PILOT OUTAGE	SLOW OR IMPROPER PILOT-TO-MAIN-BURNER IGNITION	
Gas pressure too high	x	x	See note (1) below
Gas pressure too low	x	x	See note (1) below
Orifice in pilot burner or pilot tip too small	x	x	Increase orifice size or install correct new burner or tip
Pilot adjusting screw set too low or too high	x	x	Turn adjusting screw to obtain proper pilot flame
Obstruction in pilot orifice, tip, burner body, line, control bypass, etc.	x	x	Remove obstruction
Too much primary air on bunsen-type pilot	x	x	Reduce primary air setting
Ports on pilot burner too large or too small	x	x	Install proper pilot burner
Pilot burner not of proper type for propane	x	x	Install proper pilot burner
Too much primary air or not enough gas on main burner		x	Re-adjust main burner
Main burner "pops" on extinction	x		Correct adjustment and/or installation of main burner to eliminate "popping"
Pilot too close to main burner	x		Place pilot in proper position
Pilot too far away from main-burner ports		x	Place pilot in proper position
Excessive drafts or back-pressure around pilot	x	x	Eliminate source of drafts or back-pressure
Cold junction of thermo-couple overheated from main burner	x		Correct thermocouple position or install ladder-type pilot
Pilot flame too large causing overheating of thermocouple cold junction	x		Reduce size of pilot flame
Pilot flame too small to heat thermocouple properly	x		Increase size of pilot flame
Drafts deflecting pilot flame away from thermocouple	x		Eliminate source of drafts
Pilot head improperly positioned causing improper direction of flames toward thermocouple and/or main burner	x	x	Correct position of pilot head
Thermocouple leads broken	x		Install new thermocouple leads
Thermocouple connections not making contact	x		Clean and tighten connections
Dirt or foreign matter in magnetic valve	x		Clean or replace valve
Magnetic valve defective	x		Replace valve
Thermocouple not yet hot enough	x		Allow sufficient time for thermocouple to heat up
Pilot flame, flash tube(s) or burner tray and/or burner(s) not properly positioned	x	x	Correct relative positions of all parts
Pilot flame too large causing sooting of shield or cap over pilot	x	x	Clean cap or shield and reduce size of pilot flame
Restriction of openings in cap or shield over pilot flame	x	x	Clean cap or shield and remove obstructions
Flash tube(s) dirty or obstructed		x	Clean flash tube(s) and remove obstructions
Too much primary air to main burner		x	Reduce primary air setting
Not enough gas input to main burner		x	Make sure burner and orifice spud are clean. Increase size of main burner orifice if necessary
Too much gas or not enough primary air to main burner	x	x	Reduce gas input or increase primary air
Main burner port(s) plugged		x	Clean ports
Lighter port in main burner too small		x	Increase size of port or install proper lighter port spud or new burner

Burner Operational Analysis Chart — Fig. 4

POSSIBLE CAUSE	C-O-N-D-I-T-I-O-N		REMEDY
	PILOT OUTAGE	SLOW OR IMPROPER PILOT-TO-MAIN-BURNER IGNITION	
Lighter port in main burner too large causing flame from this port to partially flash back and extinguish itself		x	Install proper burner or lighter port spud or "soften" adjustment of main burner flames
Lighter port drilled off center		x	Install new burner
Pilot assembly, flash tube(s) or burner tray and/or main burner(s) not of proper type for propane	x	x	See that correct parts are installed
Pilot located in path of products of combustion from main burner		x	Place pilot in proper position
Improper adjustment of bimetal or thermal disc type 100% automatic shut-off valve	x	x	Correct pilot adjustment on control assembly making sure that valve still shuts off all gas to main burner and pilot in required time in event pilot is extinguished
100% automatic shut-off valve obstructed or defective	x	x	Clean or replace valve as necessary
Push-button type lighter improperly adjusted or of improper design for propane	x	x	Correct adjustment of lighter or replace with proper type as necessary

OTHER CONDITIONS

1. "Putt-Putt" at Flash Tube: - A flash tube which is too close to the main burner will sometimes cause this condition. It can usually be corrected by moving the flash tube farther away from the burner. If this does not correct the trouble, it can sometimes be remedied by notching the flash tube about 1/4" on the bottom next to the burner or filing the tube back slightly at this point.

2. Flame Keeps Burning at Pilot End of Flash Tube: - This may be due to the following: -

   (a) Flash tube obstructed
   (b) Too much gas or not enough primary air to main burner
   (c) Flash tube too close to main burner.
   (d) Lighter port on main burner too large

3. Flame "Pulsates" (alternately raises and lowers): - This may be due to some dirt or other obstruction in the pilot valve, usually a small excess of grease partially blocking the hole in the plug or valve body. To remedy the valve should be taken apart, cleaned and re-greased carefully and re-assembled.

NOTE 1: - The standard service pressure for operating ordinary domestic and commercial appliances with liquefied petroleum gas is 11" w.c.

If the regulator lock-up pressure (line pressure with all burners and pilots turned off) exceeds 14" w.c. the regulator or regulators causing the high lock-up should be replaced.

If the line pressure is found to be less than 8" w.c. check for the following possible causes:-

(a) Gas lines or valves too small or obstructed.

(b) Insufficient amount of regulating equipment and/or cylinders installed.

(c) Regulating equipment unserviceable.

(d) "Freeze-up" or other obstruction in regulating equipment.

DO	DON'T
Increase the size of the vent when joining 2 vents. (See Rule 4.)	Don't run 2 vents into a common vent of same size flue pipe unless both appliance inputs are 20,000 Btu's per hour or less.
Join all fittings through a smooth flowing round cornered tee or lateral joint.	Don't install vents with square corners or sharp turns when joining 2 vents into a common vent.
Run separate vertical vents if appliances are a long distance apart.	Don't run long lateral runs to a common vent. Hot flue gases rise and will not run laterally.
Always pitch lateral vents upward 1" per foot.	Don't install vents horizontally or run them downhill.
Always join two vent connectors into a common vertical vent at different levels so no part of vent is in the same horizontal plane.	Don't join vent connectors by means of an opposing tee. The flow of gases from the vent will oppose the entry of the flue products from the other and result in venting failure.

Only Two Ways to Vent
RIGHT and *WRONG*

- **Five Basic Rules to Follow**

THE trend toward heating with LP-Gas, as evidenced by statistics which show steady gains over competitive fuels, suggests to the dealer the importance of campaigning now for the winter's heating load, and the advisability of familiarizing himself with sound, basic venting procedure.

By these two means he may insure the delivery of increasingly hard-to-get equipment later in the season and the know-how vital for installations which are mechanically correct and which provide the efficient service that will earn universal acceptance.

From the practical standpoint, there are only two kinds of appliance venting—good and bad. It's highly important that all recommended venting rules be scrupulously followed—for non-conformity with one can result in the failure of the entire system.

The "Do's and Don'ts," composed of drawings and illustrations accompanying this article are direct reproductions from the booklet "Venting of Gas Appliances."

Venting is simply the removal and exhaust of the products of combustion from a given appliance to the out-of-doors rather than into a room. In the case of gas appliances, venting is almost always totally dependent upon the heat (and consequent lighter weight) of gases to provide energy to rise and exhaust themselves into the atmosphere.

In a Purdue University report on venting, several basic reasons for operational failure were listed with their percentage of occurence, as follows:

Excessive thermal losses from vents and flues (cold flues), 31.71%.
Exterior wind pressure, 25%.
Frictional resistance, 20.12%.
Negative interior pressures, 11.58%.
Insufficient flue capacity, 5.48%.
Unvented appliances, 4.27%.
Broken vents and flues, 1.83%.

First, it is necessary to examine a modern, vented heater to understand its venting operation. It is designed with a corrosion resistant combustion chamber centered within a metal cabinet. Air circulates within the space between combus-

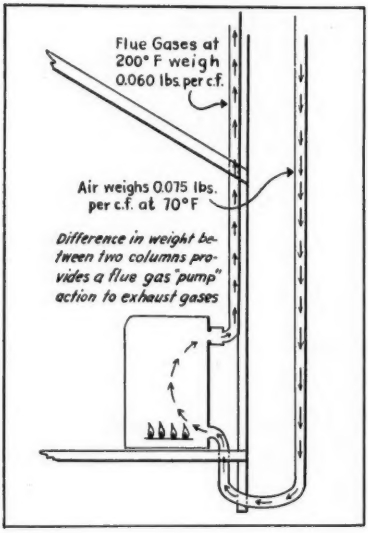

Flue Gases at
200° F weigh
0.060 lbs. per c.f.
Air weighs 0.075 lbs.
per c.f. at 70°F
Difference in weight between two columns provides a flue gas "pump" action to exhaust gases

Fig. 1.

tion chamber and cabinet, is heated, rises and enters the room.

Draft Hoods

Air is also taken into the combustion chamber, burned, circulated, and vented into the heater draft hood. (See Fig. 1.)

This hood performs three functions: (1) It permits the products of combustion to escape from combustion chamber during the brief period while a draft is being generated in the connected flue—then gases rise normally and expel themselves outside. The greater weight of an equal column of cool air causes it to press into the combustion chamber, thus completing a cycle that resembles a "U". (2) In the event of a "back-draft" it provides a release for combustion gases whose natural flow has been reversed by outside pressures, preventing them from being pushed back into the appliance, thereby "choking" or extinguishing combustion. (3) It neutralizes a too rapid "stack" action through appliance and flue. (See Fig. 2.)

The height or location of the draft hood should never be changed. It determines the rate of draft and, subsequently, the heater efficiency—thus, to change or relocate it could result in poor or hazardous operation.

The hood's draft diverter aperture on the bottom should never be cut off or restricted. Products of combustion must be momentarily released before a draft can be generated in the flue. Restriction can be worse than no hood at all, for the draft diverter baffle then impedes the upward flow of hot gases.

The diameter of the draft hood outlet automatically determines the size of the attached vent connector. Under no circumstances should this diameter be altered. The inside diameter of the vent connector

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This article and the drawings on right methods of venting are based largely on a descriptive pamphlet entitled "Venting of Gas Appliances" issued by the William Wallace Co., Belmont, Calif., manufacturers of "Metalbestos" gas vents.

The above booklet is available free of charge from the company at the given address—Editor.

must be flush with the inside diameter of the draft-hood coupling.

Vent Connectors

The second element of a venting system is the chimney or flue with which the appliance is attached to a "common connector."

In all cases the lateral run of any type of vent connector should not be longer than 15 ft. or more than 75% of vertical rise of flue from the point of attachment to the top. Vent connectors should never be run horizontally or downward. Their rate of rise should be at least 1 in. per ft. of travel—more if possible.

The vent connector should never be restricted by a 90° ell in its lateral travel. Two 45° angles should be used with at least 1 ft. of straight vent between. A 90° ell is recommended only when the vent connector is attached at the bottom of a vertical flue. At this point it may be desirable to utilize a "Tee" fitting but the bottom end should be closed as, otherwise, air would enter the fitting and cool the combustion gases, halting their rise in the flue. (See Fig. 3.)

Two or more appliances may be vented to the same common connector, or flue, resulting in minimum labor and cost by reducing the number of holes it is necessary to put through walls and ceilings for appliance venting.

Whenever two appliances are vented to a common connector, or flue, that connector, or flue, should provide a cross-sectional area equal to the largest vent plus 50% of the area of others connected to it.

Wall heaters of 20,000 Btu or less, carrying 4-in. vents, are the exception to this rule as that cross-sectional area is more than is required for the heater. A 4-in. common connector is capable of handling two heaters of that size.

Table 1, "Capacities of Vents and Flues with AGA-Approved Appliances," may be used to determine the proper diameter for common connectors on the basis of appli-

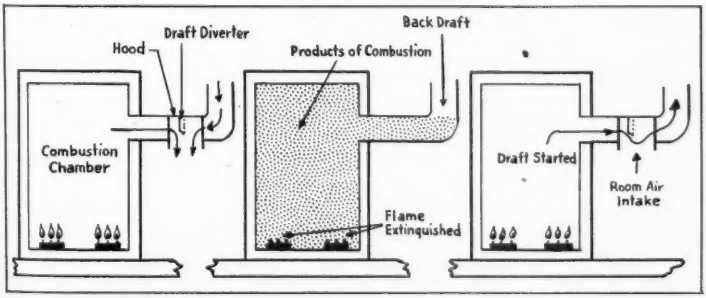


Fig. 2.

ance vent diameters or Btu output.

All Type B vent connectors should have a clearance of at least 3 in. from combustible material for a distance of at least 3 ft. from the hood in the case of floor furnace installations.

Air Supply

Since appliances require the continuous replacement of air for combustion, it becomes apparent that a volume roughly equal to the vented gases must be supplied.

This may be accomplished in three ways: (1) Appliances of small capacity or Btu output may use room air in houses of loose construction. The air removed is replaced through door and window leakage. (2) Tightly weatherproofed buildings, heavy-duty appliances, or the use of fireplaces or "exhaust fans" make mandatory the supply of sufficient air by direct or indirect methods. (3) Air intakes may be cut in the floor and grating installed. With foundation vents open for a continuous supply of air the appliance will indirectly pick up enough for combustion purposes. Fresh air intake aperture sizes are commonly figured at abcut 1 sq. in. per 1000 Btu input per hour.

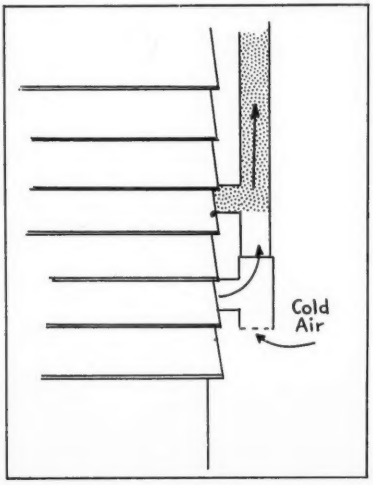


Fig. 3.

FIVE BASIC RULES

1. **Keep the flue gases hot.**
2. **Follow the vent manufacturer's installation instructions.**
3. **Select the proper vent size.**
4. **Provide constant fresh air replacement.**
5. **Install a draft diverter.**

Several of the popular vented appliances are provided with "air intake" couplings of a size sufficient for their combustion requirements. Manufacturers' installation instructions indicate the proper size duct to be connected to the appliance from the exterior through wall or floor.

If proper air supply is not provided under the circumstances noted above (weather-proofed buildings, use of exhaust fans), a condition develops in which inside atmospheric pressure is reduced below normal. Outside pressures will reverse the draft in one or more appliance flues which will then

serve as an intake. Products of combustion will not be vented outside.

Flue Installations

Efficient and dependable flue venting depends upon several fundamentals of operation which include maintenance of evenly distributed flue heat, and selection of proper flue sizes for specific appliances or combinations of appliances.

Safe flue installations that will reduce fire insurance rates for the consumer are provided through use of approved materials and observance of recommended practices.

Determining the correct capacities of flues is vital to efficient operation. Use of oversize flue material brings as poor results as flues that are too small. A popular method of determining the proper size is to add the Btu capacities of various connected appliances, then refer to Table 1 for the proper flue diameter.

Vent connectors should be attached to flues at different levels. No part of one connection should be in the same vertical plane with another. Never use a "Tee" fitting to join two appliances to a flue. At best, the meeting of two flows of gases results in turbulence within the vent connector and flue which make venting difficult if not impossible. At worst, the larger capacity appliance of the two will completely nullify the draft action of the other and force it to vent into the room.

Avoid connecting appliances located on different floor levels to the same flue. Such practice can result in combustion gases backing through the hood of an appliance connected at an upper level.

Type A flues (chimneys) are required as a vent for appliances burning solid or liquid fuels. When LP-Gas appliances are installed, or when existing appliances are converted to gas use, chimneys may, under certain conditions, be continued in use.

TABLE 1. CAPACITIES OF VENTS AND FLUES WITH AGA-APPROVED APPLIANCES.

Height from appliance outlet to top of flue (feet)	Diameter of Vent and Flue in Inches						
	3	4	5	6	7	8	10
10	31,000	60,000	100,000	150,000	210,000	280,000	460,000
15	36,000	70,000	120,000	175,000	250,000	335,000	550,000
20	40,000	80,000	130,000	195,000	280,000	375,000	615,000
30	45,000	90,000	150,000	225,000	320,000	435,000	720,000
40	48,000	95,000	160,000	245,000	350,000	475,000	790,000
50	50,000	100,000	170,000	260,000	375,000	510,000	850,000

Based on average flue temperature of 200°F, 100% excess air, and 25% dilution at hood.

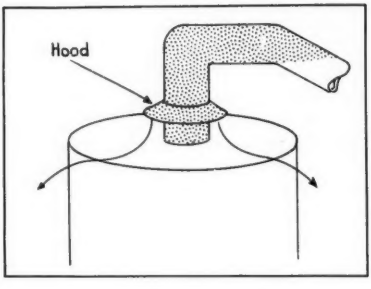


Fig. 4.

These conditions are: (1) It must be of the proper capacity (as noted previously) for the appliances vented therein; (2) it must be properly lined to prevent deterioration of mortar, seepage of moisture between bricks and resultant damage to house structure and finishes; (3) it must be of smooth surface to avoid excess friction to rising gases; (4) it must have a clean-out door at least 1 ft. below the lowest vent connection for removal of loosened soot (which should be cleared out once a month for the first several months of gas operation); and (5) the chimney must not be exposed to the weather on one or more sides for this would result in excessive heat loss from the gases.

Type B Flues

If all these requirements are not met, it may still be practical to run the proper Type B flue through the chimney at a lower cost than would accrue from installing flues in walls and through ceilings and roof.

Type B flues and vent connectors should conform to standards established by national testing laboratories, which means that they should be properly insulated and installed according to manufacturers' instructions. Failure to strictly observe established installation procedures results in the voiding of laboratory approval.

Type B flues fall into three general categories; double-walled, single wall insulated, and "Transite" type. All should be made of corrosion resistant material.

The William Wallace Co., manufacturer of "Metalbestos" (double-walled) flues, has made available a booklet entitled "Venting of Gas Appliances" which illustrates the general subject of venting and the use of its own product, which bears Underwriters' Laboratories approval.

Has Safety Factor

This type of flue incorporates an inner and outer wall. The inner wall is quick heating, resulting in rapid generation of draft. Air circulating between the inner and outer walls acts as an insulator—rises upward, maintaining an even inner wall temperature for uniform draft characteristics. This operation is also said to increase the safety factor by removing the insulating air from the area of highest temperature and greatest fire hazard through circulation.

Tests indicate that wall temperatures do not rise more than 45°F when products of combustion temperatures are 550°, in the company's wall-heater flue which employs this principle.

The wall-heater flue is rectangu-

lar in cross section and is permitted for use as close as 3/8 in. from combustible surfaces. It is equipped with a coupling for round flues above the ceiling plate. Wall air is permitted to circulate and enter the outer flue wall at its lowest point, thus providing new air for insulation. Double walled flues are also manufactured in standard diameters and round cross-section.

Single wall flues require 1-in. minimum clearance from combustible surfaces when gas temperatures are below 330°F. Between temperatures of 330° and 550° a clearance of 1½ in. is required. Air-cooled or insulated thimbles should be used wherever vents or flues pass through walls or ceilings.

The dealer should avoid installing outside flues whenever possible. Heat losses are high and the flue requires additional insulation.

Plumbers' tape, or other supporting material, should be used liberally in vent installations to provide a rigid, strong system. Flues must rise 2 ft. higher than any obstruction within 15 ft. to avoid downdrafts and should be capped with a draft hood of acceptable design.

Only by the use of approved materials, directing lateral runs with the maximum rate of rise, keeping laterals to a minimum length, and otherwise observing the basic principles of venting, can the dealer and his customer be assured of safe and efficient venting systems. There is no room for mediocrity in venting—it's either good or bad. Violation of one rule can nullify an entire painstaking installation. But good practices can help assure the future of healthful, safe, and vented appliances.

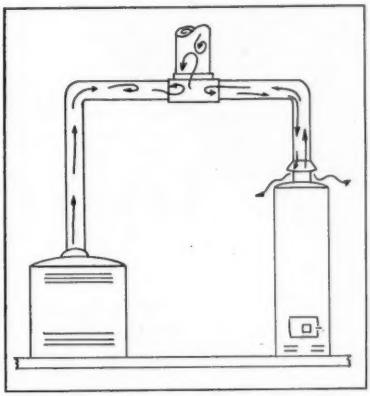
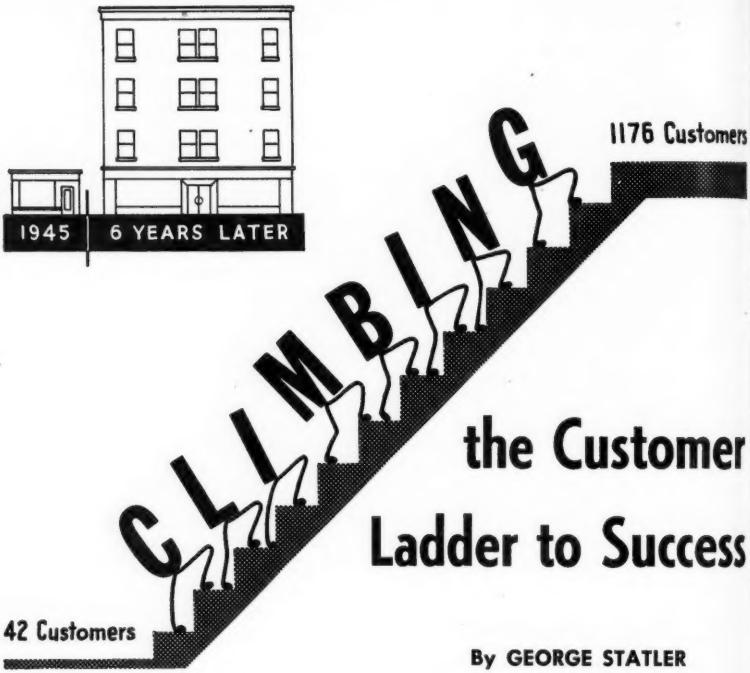


Fig. 5.



the Customer Ladder to Success

By GEORGE STATLER

JUST how was it possible for a man to set himself up in business in a town where he was practically unknown, selling a product about which he knew almost nothing at the start, and in six years be so successful that he has to find a building 10 times as large as his original quarters?

For Robert N. Hankal, Green's Fuel dealer in DeLand, Fla., there were three not-so-secret reasons: A good product, good business practices, and promotion. But other bottled gas dealers in his trade area had a worthy product. Their way of doing business could be assumed to follow sound principles or they wouldn't still be there. So it's promotion that has made the difference, the difference between a steady but unspectacular distributorship and one that has increased 28 fold in six years.

Mr. Hankal's first meeting with LP-Gas took place during his stretch as an Air Force supply officer at Arcadia, Fla. He saw it performing its famous three functions under all sorts of conditions. Then when the hurricane of '44 hit, and the LP-Gas system kept right on working when everything else broke down, he knew that here was something that would be going places in Florida after the war—and he decided to go with it.

He opened a small place in DeLand after his discharge, handling a terri-

tory which up to then had been serviced by the Green's Fuel dealer in Daytona Beach. He started with 42 customers. Beginning with one range and one refrigerator set up to demonstrate, his showroom grew into a large model kitchen and a floor area for every type of gas appliance. This made it easy to show the customer how everything worked, promoting the ease and economy of operation, as well as beauty.

His first successful stunt was the tried and true one of asking customers then on file to recommend the names of others who might be interested in a new gas stove. A stove buyer would be a prospect for a Green's Fuel system and other new appliances. The customer who had given the lead received a set of aluminum kitchenware. Two full-time and one part-time salesmen contacted prospects. In addition, every new house under construction was noted and the owner interviewed.

Uses Varied Promotion Methods

Together with active and steady newspaper and radio advertising, other promotions were tried. The most successful one was a contest, aimed at dramatizing the features of a new gas range and the economy of using LP-Gas. Mr. Hankal set a glass coffee-pot full of water on a range in his window. Three dollars worth of fuel was sealed in a tank connected to the range, and the pot started boiling over a low flame. Bi-weekly newspaper spreads as well as the window display invited contestants to submit three guesses each as to when the gas would play out and the pot stop boiling.

Guesses (or calculations based on information which salesmen furnished concerning Btu output, rate of combustion, etc.) were submitted on blanks cut from the ad or given at the store. The longer the pot boiled, the more intense interest got. Hankal's was the most-talked-of place in town! Finally, after 1209 hours, the flame died out and the winner selected from the more than 2000 entries was notified. Her sincere appreciation made a good testimonial. The entry blanks provided a whole new list of prospects.

The fact that almost 1400 contestants missed because their guesses fell short of the date gave Hankal an opportunity to point out in follow-up ads that a great many people did not realize Green's Fuel was so economical.

Performs Civic Services

From time to time a chance arises to keep the name of the firm before the public and perform a civic service at the same time without taking undue advantage of the situation. The action of several sports-minded merchants in paying the amount necessary to have the DeLand ball team's out-of-town games broadcast is an example. Hankal joined in this.

Every parade (and there are many during the winter) finds the Green's Fuel banner somewhere in the line of march.

Hankal's most expensive promotion didn't work out quite the way he planned it. West Volusia county is largely rural, and he had often wondered how not only to get his advertising but his showroom demonstrations to people living 30 and 40 miles from DeLand, many of whom only got to town once a week. If they couldn't come to him, he would go to them.

He outfitted a 27-foot house trailer as a showroom on wheels. From the model kitchen at one end to the customer's lounge at the other, it displayed every appliance in working order. Two small tanks in their bracket at the front of the trailer

provided fuel. The outside was a mobile billboard, with its "Green's Fuel of DeLand . . . the best and most economical fuel for cooking, water heating, refrigeration and house heating" in huge letters of blue and silver.

The idea was that Hankal's salesmen could tote this around the country with them. But, alas, Florida's sand roads hadn't been reckoned with! The huge trailer bogged down just where it would have done the most good. And that was that. But why not park it in a small town, let it be a branch outlet on a trial basis?

Branch Store Planned

So he tried it, and it worked. Parked on the main highway passing through Crescent City, 40 miles north of DeLand, the movable showroom began selling its wares immediately. That was in June. Already Mr. Hankal is planning on building a branch store on the site, after which he'll move the trailer to another town.

Such promotions as these lengthened the customer list from 42 to over 1200 in six years. Each served a definite purpose. One built a prospect file. The Pot Boiler roused 2000 people from their summertime lethargy and gave business a shot in the arm when most needed. The demonstration trailer created attention when it appeared at fairs and carnivals, and then went on to broaden Hankal's coverage of his own trade area.

And the payoff came August 1 when this dealer, with his three 1000-gallon trucks, his four servicemen, his salesmen, his three officeworkers, moved into a $31,000 Nissen-type building with about 1000 square feet of floor space and a Permastone front. He's planning a big housewarming party. He'd like to arrange the appliances in model setups so the customers can see how they perform under actual cooking and heating conditions. There's plenty of room for expansion—in the new building and in West Volusia county.

"It's been a real fine six years," Robert N. Hankal declares. "Successful, I'd say. I believe in promotions."

NGAA Will Investigate LPG Odorants

Joe Wood, chief chemist, Skelly Oil Co., Pawhuska, Okla., has been appointed chairman of the technical committee of the Natural Gasoline Assn. of America, according to a recent announcement by NGAA president, John F. Lynch. Mr. Wood succeeds H. A. Montgomery, Warren Petroleum Corp., Houston, who served as chairman of the committee for three years. J. L. Thompson, research engineer, Lone Star Producing Co., Dallas, was named vice chairman of the committee.

Mr. Wood will also direct the LP-Gas subcommittee investigation of odorants which may prove more effective as warning agents in domestic service than those presently used. It is probable that an extensive research program will be undertaken as a result of current studies.

Dr. E. H. Koepf, Atlantic Refining Co., Dallas, was named chairman of the high pressure absorption committee and A. J. Miller, Phillips Petroleum Co., Bartlesville, will continue to direct activities of the fractional analysis subcommittee.

The latter group is working on improvements in analytical methods to obtain more accurate results, the studies being made with the cooperation of 58 oil company and commercial laboratories. The plant control test subcommittee is headed by K. C. Bottenberg, Phillips Petroleum Co., Bartlesville.

Small considerations for comforts tie in with frank discussions of company problems in building good will and cooperation among those who work for dealers.

How to Conduct Employe Meetings

IT may surprise you to know that many successful business men, both LPG dealers and others, do not regularly conduct employe meetings. After all, it is trouble and time consuming to call everyone together. If a dealer has done well without meetings thus far, why should he bother with them?

First, it is logical to assume that some dealers have been successful in spite of their failure to hold employe meetings—not because of it. Then, too, many dealers admit that they want to conduct group meetings, that they recognize their value, but they feel incapable of coping verbally with all employes at the same time. They are afraid they will not have an answer for everything. "I'm a business man but not a public speaker," one dealer recently confided.

There are many advantages to good employe meetings. For example, there is no better way to an-

By BILL N. NEWMAN
Director, Fort Worth Retail Institute and President, Fort Worth Retail Personnel Assn.

BILL N. NEWMAN

nounce general information than by getting together all who are concerned. The information may have to do with safety rules, a new line of appliances, collections, or even a sales promotion. Why not let everyone in on it? Inspire some enthusiasm. If properly conducted, an employe meeting will cause the workers to feel that they have a say in how the business is being run or that they are being taken into the store's confidence. Loyalty, teamwork, and cooperation can be generated. Also, you can give everyone a chance to ask questions; whereas, most employes are reluctant to enter the office individually to ask questions.

It all adds up to a more efficient staff, and a more efficient staff adds up to increased sales and greater profits. Is it any wonder, then, that employe meetings are a must?

You Can Do It

It does not take an accomplished public speaker to do the trick. On the other hand a course in public speaking, if available in your community, would be an asset. A number of books on the subject are available in most public libraries.

A formal speech is not necessary, however. Relax, be natural, and just talk. Talk to the group as if you were talking to one person. If necessary, single out one person and think of him while holding the meetings, but move your eyes constantly through the group. Those who are not sure of their delivery or ability to speak before groups may do well to use a wire recorder or record cutter. A play-back of the meeting, which should be done only in private, will help you detect your weaknesses. As for stage fright, just remember that more people have died in audiences than on speaking platforms.

How to Get Ready

Good physical arrangements help make meetings successful. Select a spot in a company building that is large enough for the purpose. There should be chairs for all; don't leave a single person on his feet or sitting on uncrated appliances.

Designate someone to answer a knock at the door or a ring of the telephone. Interruptions should be prohibited. The effectiveness of the meeting and the morale of the workers is severely impaired when the boss leaves everyone hanging for several minutes while he answers a call. It is easy for the person you designate to say, "Mr. Jones will be back in about 15 minutes; can I help you, sir?"

The door that late comers or trespassers will use should be at the back of the audience, or facing you as you address the group. Anyone using the door while the meeting is in progress will not disturb the group. It is most distracting to have the entrance and exit at the

front of the room near the speaker.

The easiest way to put people to sleep is to have a bright light behind the speaker. Even glare from a window that is faced by the group can result in a snore. Let most of the light come from any point except the front of the room.

Room Temperature Important

To mention temperature and ventilation seems elementary, yet it is a problem. Fuel truck drivers and installation crews are accustomed to fresh air and low temperatures, while the office force, particularly the ladies, want the meeting room to be warm. The dealer should remember that it's not a question of whether or not he is comfortable—it is, are the employes comfortable? Why not ask about the temperature as you begin each meeting?

Dealers often want to know when and how often meetings should be held. An obvious answer is hold meetings at any time you have sufficient reason for doing so. On employe time or company time? Preferably on company time. Attending a meeting is as much a part of a worker's job as installing a system or changing the orifices on a customer's range; therefore, company time should be used. If you are obliged to schedule a meeting before or after normal working hours, you can pay employes for their time. Since everyone is more alert in the early mornings, many dealers schedule their meetings accordingly. A regular get-together every Monday morning may facilitate lining up the week's work and result in an enthusiastic plunge into the job.

Let's Get Started

Enough for preliminaries—let's start a meeting. Two workers haven't come in yet, though. Should we start without them? By all means begin on time; to delay is futile. It's a mistake to penalize a number of employes who arrived for the meeting at the appointed hour, so that one or two late comers will not miss out. Further, if your workers learn that you will wait for them, some will take their own sweet time about getting there. You'll find that the meetings will become later and later in getting started if you wait for every employe to appear. Begin on time regardless. Those arriving late are usually so embarrassed they will be on time in the future.

Present the items to be discussed in a way that arouses interest. Give the background of the problem, explaining why the matter is being

Mr. Newman presented the course on "How to Conduct Employe Meetings" at the Texas Butane Dealers' Management Institute in 1950 and again in 1951. He is an authority upon this subject.

Last month he told readers of Butane-Propane News how to take the basic steps in training an employe.

Soon he will write upon the subject of "Customer Relations."—Editor.

IT'S *Automatic...*
and I love it!

Ninety-nine times out of a hundred Mrs. Housewife isn't the least bit concerned about the mechanical "ins" and "outs" of an LP-Gas installation . . . but, she becomes mighty interested when she learns that the portable cylinder system you intend to install for her will be fully automatic, and provide the convenience of uninterrupted gas service.

Yes, every housewife will say, "It's Automatic . . . *and I love it!*", when you specify these new, inexpensive RegO Automatic Throwover Outfits for all of your installations using 100 pound or 20 pound cylinders.

NEW DESIGN AND NEW LOW COST BRING YOU ADDED SELLING AND PROFIT ADVANTAGES!

1. Dependable two-stage pressure reduction.
2. Unit provides automatic withdrawal of gas from reserve cylinder after fuel in service cylinder is exhausted; or in the event that pressure drops too low due to heavy fuel demand.
3. Cylinder in use is positively identified.
4. Replacement of empty cylinders without interrupting gas flow to appliances.
5. Choice of direct or remote-mounted indicating gauge.

MEMBER
national LP-GAS PROMOTIONAL program

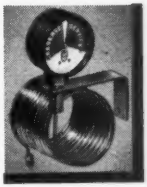
The BASTIAN-BLESSING Company
4201 W. Peterson Ave., Chicago 30, Illinois

PIONEER AND LEADER IN THE DESIGN AND MANUFACTURE OF EQUIPMENT FOR MAKING AND CONTROLLING LP GASES

NEW!
LOW COST!

Automatic
Throwover
Manifold
Outfit

RegO No. 15774C Outfit



Remote-mounted indicating gauge optional. Installed outside kitchen window, it permits the housewife to check fuel supply without going outdoors.

REGO
LP GAS EQUIPMENT
Stocked by These Distributors:
GAS EQUIPMENT CO.
Dallas, Texas
GAS EQUIPMENT SUPPLY CO.
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GAS EQUIPMENT CO.
of DENVER — *Denver, Colo.*
A. C. FINK, S. A., *Mexico, D. F.*
EMPIRE BRASS MFG. CO., LTD.

RegO is the registered trade mark of the Bastian-Blessing Co.

brought up. Then become a teacher. When imparting information at a meeting you should let it soak in or drive it home. You should actually teach, much like a public school teacher would do. Instead of calling off a list of things you want done, take one item at a time and explain what it is, when it should be done, where it should be done, how it should be done, and why it should be done. Train in specifics; by so doing your meetings will have real value. If necessary, demonstrate the idea you are trying to put across to the group.

Discussions Show Thinking

The dealer who permits discussion knows how the people are thinking. Encourage discussion. Moreover, get good distribution of discussion, so that one or two employes will not "hog the show." If a worker contributes an idea that has little merit, try to find something good about it. You can at least thank him for the contribution, because ignoring him or ridiculing him would result in resentment. Another reason why employes should be encouraged to take a verbal part is that they need some way to express themselves. They may have very strong feelings about something. To let resentment store up is dangerous—it may lead to an explosion. Let employe meetings serve as pop-off valves. You have pop-off valves on cylinders and tanks; now you can have them on employes. The workers can let off a little steam and be straightened out before conditions become critical.

Arguments in meetings should always be avoided. The dealer who argues with a worker loses the respect of his entire staff. Keep fully composed. Most arguments will be prevented if the dealer explains why his instructions are necessary and should be carried out. Sometimes a little humor is priceless, too. A tense situation can often be relieved with a humorous story or joke, especially if the humor is related to the plight of the moment. People can be "kidded" out of much ill feeling. There's another way of avoiding an argument with the employe who persists in clashing with you: "John, we're running out of time. Suppose we go on with the meeting, and I'll talk further with you on this as soon as the meeting is over."

Have a Strong Closing

The session that drags on and on is discouraging and exasperating to everyone. It breaks morale. Meetings should be held often enough so there is not a great deal to cover at any one time. When things bog down, simply take the initiative and move them along. In closing your discussion summarize the points covered. Be sure that there is a meeting of the minds on the major issues, *being careful to leave the group with a feeling that something was accomplished.* Consider posting on your bulletin board the information decided upon. To decide on something is hardly sufficient, however, as you should also check to see if the ideas are executed. Results are what count; insist on them.

How about giving it a try?

COOKING SCHOOL FOLLOW-UPS

• bring HIGH Sales Returns

Not more than 25 persons attend the highly successful cooking school demonstrations of this Indiana dealer. The guests are drawn from a selective list of potential prospects and are individually invited. This has been going on since the first class of 25 women bought 15 ranges!

By MYRA HILDERBRAND

WHILE there is no doubt that the cooking school form of promotion for LP-Gas appliances is very much "old hat" it is still the most consistently successful sales help, according to B & B Hardware Co., dealers of Columbia City, Ind.

Neal and Eldon Holland, brothers who operate the firm, regularly staged cooking demonstrations full of clever stunts and unusual merchandising ideas. During the past two years, according to Neal, the dealership has averaged the sale of around 15 LP-Gas ranges per demonstration, spread out over a period of about 90 days. "Cooking demonstrations made it possible for us to double our volume in the first year over the preceding year's best figure," he added.

The Holland brothers' theory in connection with cooking school promotion consists of four points, which are:

1. Make them short and interesting.
2. Serve hot foods with unusual angles in preservation or cooking played up.
3. Invite only a "closed list" of worthwhile prospects.
4. Follow up every visitor within a week.

Demonstrations are carried out in a model kitchen at the rear of the showroom, with only about 25 guests invited. Each receives either a personal telephone call or letter as an invitation, promising plenty of excitement and a pleasant afternoon. In many instances, when the housewife involved states she has no means of getting downtown, the Holland brothers will send a company car after her, a courtesy which brings excellent results in the future. Each demonstration is carried out within the space of two hours, which doesn't permit the average housewife time to become bored. Likewise, while a home economist is sometimes provided, most of the cooking is done by Neal or Eldon, women invariably being surprised that a man can turn out tasty meals with the bottled gas equipment shown. "Many women figure that if we can produce hot food they'd be

proud of, the gas range must live up to its claims," Neal grinningly stated.

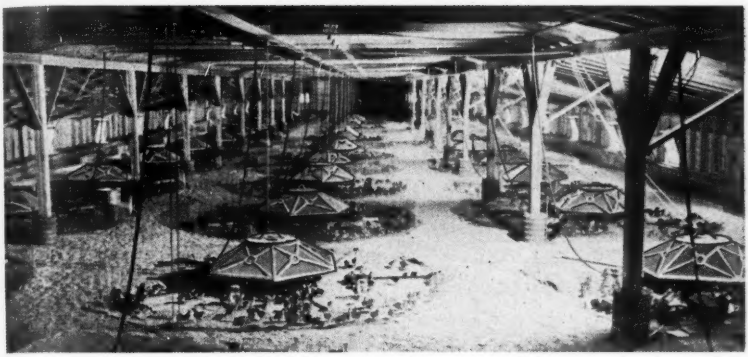
Lunch is always served at the end of the demonstrations, which include emphasis on the quick heat available, "cooking with the gas turned off," ease of broiling meats in the oven, deep well simmering, and other features, depending upon the model. Hot coffee, hot ham sandwiches, chicken, soups, etc., are all prepared.

Perhaps the most unusual stunt which the Holland brothers have developed consists of making sandwiches with white and rye bread which has been frozen rock-hard in a home freezer which is part of the model kitchen. The loaves, in plastic bags, are passed around for the assembled housewives to feel before being used. They thaw out for tasting by the time the hot ham, sliced chicken or other luncheon meats are ready. This single idea has helped to sell a lot of additional appliances in addition to ranges, Neal Holland indicated.

The first such demonstration made resulted in the sale of 15 ranges among the 25 women who attended, a tremendously high percentage from any standpoint. The reason for this is tight followup on every such prospect. Names and addresses are naturally already in hand when the invitations are made. Within a week following, one brother or the other calls upon each prospect, often in the evening when husband and wife can be contacted together, and closes the sale. Armed with a variety of time-payment plans, and well acquainted with farmers' resources in the area, Holland brothers can make LP-Gas appliance installations with minimum strain on the customer's budget, even under today's tight governmental restrictions.

"One sale leads to another," Neal says. "Once we have used the gas range sale to start the customer on butane gas as a fuel, we can usually count on adding a water heater, perhaps a refrigerator, and heating equipment within the second year. For this reason, we put a lot of time and study into every cooking demonstration."

LP-Gas and appliances are publicized by the firm by means of a half-hour news and music program, broadcast for farm listeners by a Warsaw, Ind., radio station. Giving the names of farm wives who have just installed new gas ranges is a "twist" which helps listenership and capitalizes on the "Keep Up with the Jones" angle, the Hollands have found.



Part of an installation of 52 drum-type gas brooders on the Kellerman farm, Romney, Ind.

WARM ROOM BROODING METHOD

Reduces Losses For Indiana Farmer

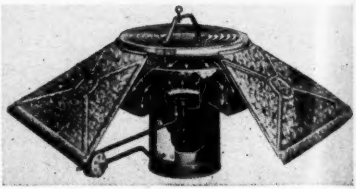
THE Kellerman farm at Romney, Ind., last season raised several thousand turkey poults under Oakes brooders operating on LP-Gas. The brooders were supplied from the three 1000-gal. storage tanks filled by the Lafayette Bottled Gas Co., Lafayatte, Ind. The Lafayette company, in turn, is serviced by Tenbrook Sales, Inc., from its bulk plant at Kokomo.

The farm, using the warm-room brooding principle, actually had in operation 52 Oakes stoves manufactured by the Oakes Manufacturing Co. of Tipton, Ind. This brooder is particularly suitable for large broiler farms using the floor method of brooding. The Kellerman brooder house measures 210 by 50 ft. and is in operation yearround, raising turkey poults and broiler chicks.

During the past season Mr. Kellerman brooded several thousand turkeys at a fuel cost of 2c per turkey. Chicks started last spring when the weather was exceptionally mild have been brooded at a fuel cost of 6/10 of a cent per chick. Averaging summer and winter cost of brooding broiler chicks, Mr. Kellerman indicates that his cost for the season would run approximately 2c per chick for fuel.

Each brooder, with a capacity of 450 to 500 chicks, is a blued-steel heater drum measuring 22¾ in. in

THERE, FOR MY MONEY, IS THE FINEST SELF-POWERED CONTROL SYSTEM ON THE MARKET!
RIGHT! YOU CAN'T MATCH THE HONEYWELL POWERPILE FOR COMFORT AND DEPENDABILITY!
MINNEAPOLIS
Honeywell
First in Controls



Cutaway view of Oakes gas brooder, showing heater, drum and canopy.

diameter, 7¾ in. deep, and with a 60-in. galvanized canopy. The burner and two-way pilot light are completely enclosed, preventing chicks from "winging out" the pilot. This eliminates fire hazard.

Automatic safety shutoff valve, accessible air vent for making adjustments for perfect combustion, and an automatic heat regulator mounted at the edge of the canopy are standard equipment. When the brooders are not in use, they may be lifted to the ceiling and out of the way by means of a heavy strap iron hanger bracket attached to the stove.

Imperial Oil Sells Four Retail Operations

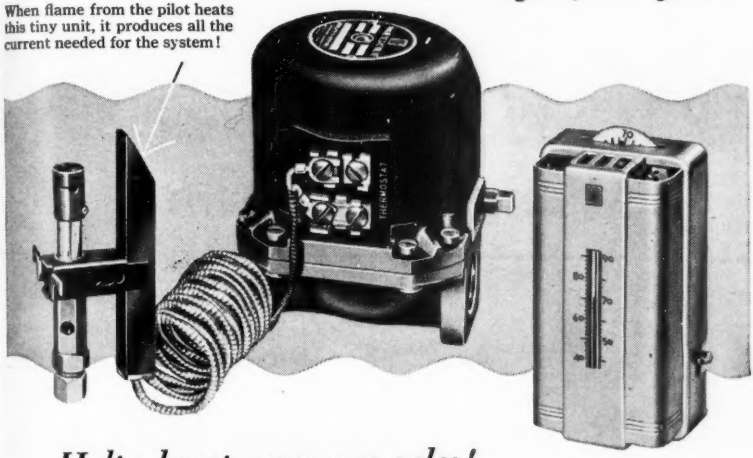
Imperial Oil, Ltd., has sold its retail propane gas—Essotane—in Ontario to Superior Propane, Ltd.

The latter is a new firm organized by a group of Canadian and American businessmen.

Among the assets disposed of are Imperial Oil's propane plants at Stratford, Carleton Place, Belleville and Maple.

Meet the Honeywell Y200 Powerpile System*
—designed for all gases

When flame from the pilot heats this tiny unit, it produces all the current needed for the system!



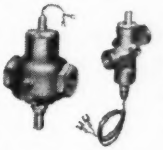
Helps boost your gas sales!
Helps boost heating equipment sales!

Now—*all* your customers and prospects can enjoy the comfort and convenience of automatic heating—thanks to the Honeywell Powerpile. This remarkable device is completely self-powered—needs no house current. It can be used in non-electrified areas and wherever electric supply is undependable!

The Powerpile is *silent*—quiet as the flame which powers the system. And it is versatile—works equally well with gas-fired space heaters, floor furnaces, wall-type heaters, individual radiators, boilers and furnaces.

The Y200 includes the T804B Heat Leveling Thermostat, the VS887A Diaphragm Valve, the Q182 Powerpile, vent tubing, wire and staples—ready to install. Each unit has all the fine-quality construction that made Honeywell First in Controls. One of the pilotstats below should be used in L. P. installations.

Yes, this is a major profit opportunity— so start now to cash in! For complete information, call your local Honeywell office. Or write Honeywell, pt. BIN-10-100 Minneapolis 8, Minnesota.



C5542 and C5543 Pilotstats above have been specially designed for use with L. P. gases. Made to operate on the output of the Honeywell Powerpile. They shut off gas flow to main burner and pilot in event of pilot flame failure.

MINNEAPOLIS
Honeywell
First in Controls

H HONEYWELL

*Reg. T. M.

PRACTICAL MANAGEMENT OF AN LP-GAS BUSINESS

CHAPTER 7

Is Your Price Schedule Competitive With Electricity?

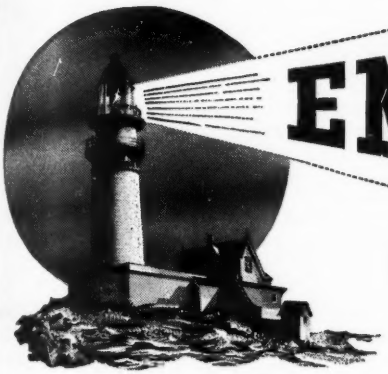
IF the "Reddy Kilowatt" boys hadn't looked down their noses at us in the days of our infancy there probably would not be any liquefied petroleum gas business today. That was back in the days when installations cost the customers $59.50 each, gas was selling at better than 63c per gallon, (15c - to - the - pound-sellers) and heavy acetylene cylinders were adapted to liquefied petroleum gas use.

We weren't competitive with electricity in those days, but the electric boys didn't know it, and had they known it they wouldn't have cared, for in their opinion this gas business was but a flash in the pan that was doomed to failure.

Those days are now but a faint memory. Old-timers speak with bitterness of the "chisellers" which invaded the business, but were they chisellers or practical business men who realized that the bonanza was too good to last and that they must prepare to swap Btu for Btu with the electric boys? I prefer to think the latter.

The electric giant has awakened. I have before me a confidential bulletin, put out by one of the large

By C. C. TURNER

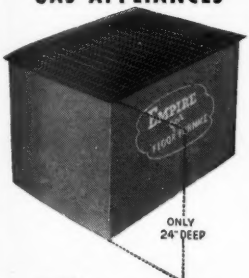


EMPIRE

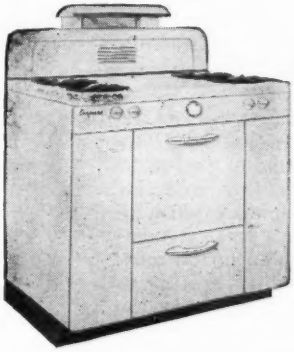
LIGHTS THE WAY

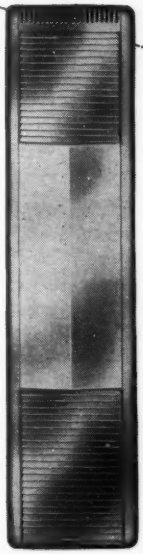
FOR VOLUME SALES
BETTER CUSTOMER SATISFACTION
with
HIGH *Quality* GAS APPLIANCES

AGA APPROVED



ONLY 24" DEEP





EMPIRE GAS FLOOR FURNACES

For Increased Sales . . . Greater Profits . . . It's the Empire Gas Floor Furnace only 24" deep. Easy to install . . . A minimum of service calls.

EMPIRE GAS RANGES

The Latest in modern design top cooking performance. The outstanding Features set the pace for Leadership in Sales and Profits.

EMPIRE RECESSED HEATING SYSTEM

Modern Recessed Heating System provides zone control at Low Cost . . . Easy to install between 16" studs.

SEE YOUR REPRESENTATIVE OR WRITE DIRECT TO **EMPIRE**

EMPIRE

STOVE COMPANY

BELLEVILLE, ILLINOIS

WORLD'S LARGEST MANUFACTURER OF *Gas* FLOOR FURNACES

If the "Reddy Kilowatt" boys hadn't looked down their noses at us in our infancy—

electric companies for the benefit of its managers and salesmen, in which it states that, in cooking, 3 kilowatt hours of electricity are equivalent to 1 pound of propane gas and that in water heating 1.9 kilowatt hours of electricity are equivalent to 1 pound of that same gas! In other words, this particular electric company claims to do with 10,236 electric Btu's what it takes 21,633 gas Btu's to do in the cooking field, and in water heating to make 6482 electric Btu's do the work of 21,633 gas Btu's! It will be shown in the following paragraphs how badly these figures are exaggerated.

Released price schedules now are not in any sense competitive. This places the gas man who is out on the firing line at a tremendous disadvantage. Price schedules should be established that place selling organizations in a healthy competitive position. If you are operating under a controlled price schedule you should be able to tell whether or not that schedule is competitive to electric prices, and if you are to establish your own price schedule, then you must know how to do it.

Let us first investigate electric price schedules and see how Reddy Kilowatt compiles them. He knows that we cannot be dangerously competitive in the lighting and small appliance markets so here is where he "tucks the tariff" to the consumer. He assigns the first 25 kwh's in the month to these purposes and collects a premium price for them. At present he has the refrigeration field mostly to himself and claims that he can run the average electric refrigerator on 30 kwh's per month, so he assigns the next 30 kwh's per month to it and still charges a premium price.

Cooking Schedule

Next he comes to the cooking load of which he has but little and wants much more of it. He claims that this can be handled on 100 kwh's per month, and scales his prices down accordingly. Water heating is much desired by him, particularly if it can be done during "off-peak" hours. He says that this can be done on 340 kwh's per month and really gets down to rates that are cheap.

A typical and actual rate schedule is as follows:

First 8 kwh per month.....$1.00
Next 62 kwh per month,
5c per kwh..... 3.10
Next 130 kwh per month,
2c per kwh..... 2.60
All over 200 kwh per month, 1c per kwh.

Now let us see how this rate ap-

Brilliant Fire Heatmakers

FOR ALL GASES

THE NEW

3-WAY CIRCULATOR

with

PYREX GLASS FRONT

Built-in Draft Diverter, fixed Pilot, 100% Welded Heating Section and Fingertip Controls.

CHECK THE B-F LINE

Every need for Room or Apartment space heating.

Newest addition is the

RECESSED WALL HEATER

Write for Details

WRITE FOR LITERATURE & PRICES TODAY

The **OHIO FOUNDRY & MANUFACTURING CO.**

Engineers · Manufacturers · Designers

STEUBENVILLE · OHIO · U.S.A.

Quality HEATING EQUIPMENT SINCE 1846

plies to the power estimates that he makes for the average family.

25 kwh per month for lights and small appliances	
8 kwh	$1.00
17 kwh @ 5c	0.85
25 kwh for lights and small appliances	1.85
30 kwh per month for refrigeration	
30 kwh @ 5c	1.50
100 kwh per month for cooking	
15 kwh @ 5c	0.75
85 kwh @ 2c	1.70
100 kwh	2.45
340 kwh per month for water heating	
45 kwh @ 2c	0.90
295 kwh @ 1c	2.95
340 kwh	3.85
	$9.65

In this price schedule Reddy Kilowatt claims that he can take care of all the energy demands in your home excepting heating for the trivial sum of $9.65 per month. The uninitiated might jump to the conclusion that in order to be competitive the liquefied gas man would have to take on the cooking and water heating jobs at prices near or below his cost.

In the cooking service there are many conflicting claims. Comparison bases which have received wide acceptance are the conclusions reached some years ago by the American Gas Assn. in Bulletin No. 6. They are as follows:

Scope of Test	Energy Ratio
Top burner performance	1.532
Oven performance	2.624
Week's menu (upper income)	2.077
Week's menu (limited income)	1.799
Food for infant	1.754

I believe that the "limited income" comes the nearest to being the average condition in American homes. If we accept the association's findings and use an energy ratio of 1.799, it requires approximately 0.284 lbs. of propane to every kwh, or 3.52 kwh to every pound of propane for the two fuels to be upon a break-even basis.

Personally, it is hard for me to accept such a basis, for I can point to many instances in my own vicinity where we have saved customers money on 12 cents per lb. propane as against 2 cents per kwh. electricity.

Utility Conducted Tests

This referred particularly to gas used in cooking. Since that time the Equitable Gas Co. has run exhaustive tests on natural gas in competition with electricity and demonstrated that:

60-cent, 1000-Btu gas and 1.7 cent per kilowatt hour electricity, proved gas top burner cooking to be cheaper by a ratio of 6 to 1, oven roasting 4 to 1, and broiling 4½ to 1.

With a greater efficiency for liquefied petroleum gases of approximately 10%* because of more closely controlled chemical content and pressures, an equivalent of 5.09 kwh's to 1 pound of propane is arrived at in top burner cooking, and 3.39 kwh's to 1 pound of pro-

*Manufactured and natural gas do vary in some sections of the country to the 10% indicated but most natural gas from the Southwest areas is quite uniform in both chemical analysis and heating value. Therefore, the figures quoted should be reduced approximately 10% to bring them in line with uniform heating value products.—Editor.

KEROTEST

Safety Type
C-35
LP-GAS
CYLINDER
VALVE

MOST widely accepted!

MOST widely used cylinder valve in the LP-Gas industry

UL LISTED UNDER REEXAMINATION SERVICE UNDERWRITERS' LABORATORIES, INC.

KEROTEST MANUFACTURING CO.
2525 Liberty Ave., Pittsburgh 22, Pa.

TABLE 7. KWH'S OF ELECTRICITY EQUIVALENT TO 1 POUND OF PROPANE WITH VARIOUS PERCENTAGES OF TOP BURNER AND OVEN COOKING.

If this percent of the cooking is done on top of the stove	And this percentage of the cooking is done in the oven	Then the number of kwh's equivalent to 1 pound of propane will be
70	30	4.577
75	25	4.665
80	20	4.75
85	15	4.835
90	10	4.92
95	5	5.005
100	—	5.09

pane for oven cooking. The percentage of top burner cooking in relation to the total cooking done has much to do with establishment of energy ratios as illustrated in Table 7.

Cooking habits in American homes do not vary too much and it is generally conceded that the average is 80% on top of the range and 20% in the oven. Accepting this basis, a comprehensive table (No. 8) has been constructed showing equivalents for propane and butane and butane-propane mixes in the common units of measurement.

The variance of kwh equivalents is so slight in all units of measurement excepting the cubic foot that propane can be taken as the standard for compiling all tables excepting in this one unit of measurement.

When it comes to water heating, Reddy Kilowatt is so far wrong that it is ridiculous. If his own water heater were 100% efficient and 1.9 kilowatt hours of electricity would do the work of 1 pound of propane, then 1.9 x 3412 or 6482.8 Btu's of electric energy would be equivalent to 21,633 propane Btu's! This would make the gas water heater but 6482.8/21,633=29.9% efficient. This would be less efficient than an oil water heater and almost as inefficient as the hod-a-day coal water heater!

Now if an electric water heater is 100% efficient Reddy Kilowatt is well upon the road to discovery of perpetual motion, for he has found how to transfer energy to a medium without any loss. There is no such thing as a perfect insulating material, and if we are charitable enough to grant that this loss through the exterior shell of the electric water heater is but 5% then we will be getting 95% or 3241.4 useful Btu's out of the 3412 Btu's, equivalent to one kilowatt hour of electricity.

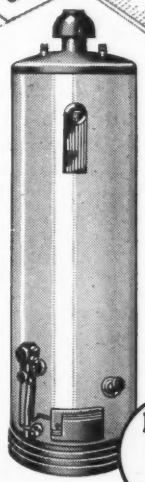
Gas water heaters have to be at least 70% efficient to be accepted,

use the Rheem Rule for Profit Today!

Your Profits Can Measure Up to the best of past years and more.

Just use the RHEEM rule—"Sell Up—Size Up." Sell every prospect *up* to the size water heater he really should have . . . big enough to meet the *peak* needs of his home, the expected needs of his growing family. And sell him up to the *quality* he needs to get the most for his water heater money. That's how to build up your *unit sale*—the key to profits today.

Every part of the Rheem Reliable Dealer Program . . . every National Rheem advertisement . . . and every model in the complete Rheem line is designed to help you win in *today's market*. So, sell up . . . size up . . . and step up your profits with *Rheem!*



Rely on Rheem

WORLD'S LARGEST MAKER OF AUTOMATIC WATER HEATERS

Rheem R

RHEEM MANUFACTURING COMPANY, 570 Lexington Avenue, New York 22, N. Y.

so 15,143.1 of the 21,633 Btu's in a pound of propane must be doing useful work. It is just simple arithmetic to divide 15,143.1 by 3241.4 and find out that it takes 4.67 kwh's of electricity to be equivalent to 1 pound of propane. Here again values for the various liquefied gases in the common units of measurement can be established, as shown in Table 9.

These Tables, 7, 8 and 9 are basically correct, and you can use them as a foundation for computing gas rates which are competitive to electricity without fear of making comparisons which you cannot back up in actual practice. It goes without saying that the appliances which you put up against electricity in competition must be good, that they must be properly adjusted, that gas pipe lines and regulating equipment must be properly sized and correct, even pressures maintained.

Lest Reddy Kilowatt picks this statement up too quickly I add that the same conditions must apply to his appliances and supply lines as well. A common fault of electric service is low voltage which varies, and this is responsible for more damage to electric appliances than any one other cause.

For on-the-spot comparisons with electric rates these tables may also be used for approximations. As an example, let us say that you are selling a "mix" of 80% butane and 20% propane by the gallon. Suppose that the electric company has a rate of 1.2c per kilowatt hour for water heating and you want to know what your price per gallon must be to equal it. In Table 9, under "Gallon" and opposite "80% Butane 20% Propane" you will find 21.70 kwh's as being equivalent to 1 gallon. Multiply 21.70 by 1.2c and you know that at 26.04c per gallon you would be at parity with

TABLE 8. KWH'S OF ELECTRICITY EQUIVALENT TO VARIOUS UNITS OF MEASUREMENT FOR DIFFERENT LP-GASES— 80% TOP BURNER COOKING, 20% OVEN COOKING.

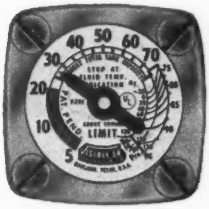
Fuel	Pound	Gallon	Cubic Foot	Therm	Decitherm
Propane	4.75	20.09	.5286	21.95	2.195
Butane	4.68	22.69	.7020	21.94	2.194
80% Butane 20% Propane	4.69	22.04	.6847	21.94	2.194
60% Butane 20% Propane	4.71	21.67	.6499	21.94	2.194
40% Butane 60% Propane	4.72	21.14	.6183	21.94	2.194
20% Butane 80% Propane	4.73	20.57	.5817	21.92	2.192

THERE IS A VISIBLE MAGNETIC FLOAT GAUGE

for Every LP-G Need!

JUNIOR*

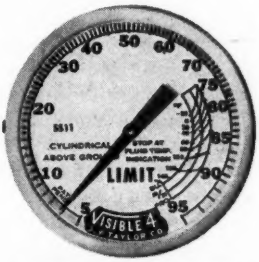
1½-inch dial face



SENIOR*

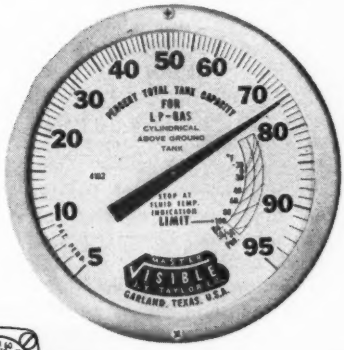
2-inch dial face

***For above or below ground domestic systems and motor fuel tanks. Top, side, end or angle mount.**



VISIBLE "4"

4-inch dial face. For large domestic, small storage and transports.



MASTER

10-inch dial face. For LP-Gas and Anhydrous Ammonia storage tanks.

SQUIBB TAYLOR

INCORPORATED

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TABLE 9. KWH'S OF ELECTRICITY EQUIVALENT TO VARIOUS UNITS OF MEASUREMENT FOR DIFFERENT LP-GASES IN WATER HEATING.

Fuel	Pound	Gallon	Cubic Foot	Therm	Decitherm
Propane	4.671	19.75	.5198	21.58	2.158
Butane	4.606	22.33	.6909	21.60	2.160
80% Butane 20% Propane	4.619	21.70	.6743	21.61	2.161
60% Butane 40% Propane	4.632	21.31	.6392	21.58	2.158
40% Butane 60% Propane	4.645	20.80	.6084	21.59	2.159
20% Butane 80% Propane	4.658	20.26	.5729	21.58	2.158

electricity at 1.2c per kwh in water heating.

Again let us suppose that the electric company has a rate of 2c per kwh for domestic cooking. If you are selling propane by the decitherm you will find 2.195 in the "decitherm" column opposite propane in Table 8. Multiply 2.195 by 2c and you know that at 4.39c per decitherm you would be at parity with electricity at 2c per kwh in domestic cooking.

But here comes the rub for the Kilowatt boys that they'd like to have you overlook. Few if any of them have flat rates for domestic cooking or water heating. Each month the customer has to go back to the top of their price schedule ladder and work down through high priced kilowatt hours to their mythical 2c cooking and 1c water heating rates. Gas men are too prone to overlook or forget this.

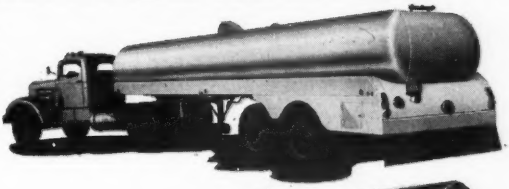
Furthermore, if you are just going after the domestic cooking load you won't get very far in the gas business. You must be able to (1) break down competitive electric price schedule and (2) then construct a composite gas rate which takes in cooking, water heating and then invades the precincts of oil in space heating. There is much more to rate making than grabbing figures out of the air or establishing prices that you well know are lower than competition. Such rate making can be expensive or throw you for a substantial loss of profits.

Gas has so many advantages over electricity in cooking and water heating that if your rate is on a parity basis you are still granting the buyer a bargain.

In coming chapters we will go extensively into the correct methods of constructing composite competitive gas price schedules.

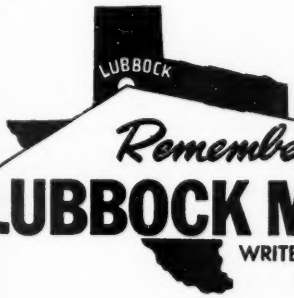
YOU CAN'T BEAT THE LMC TEAM FOR LOW MILEAGE COSTS

Standard equipment for the thrifty L-P Gas Hauler is the LMC twin-barrel unit with a capacity of 3000-5500 gallons. Your choice of single or dual axle.



Some distributors have found this triple-barrel unit especially effective in cutting mileage costs per haul. Available for use with single or dual axle tractors.

The LMC Delivery Unit is built for economy. Like all LMC Transport Tanks it is constructed of high-tensile steel with recessed fittings.



Remember! LMC LOW MILEAGE COST

LUBBOCK MACHINE CO., Inc.

WRITE, PHONE OR WIRE LMC, BOX 1138
PH. 4631—LUBBOCK, TEXAS

Associations

F. W. FROST

ROY JOHNSON

North East District Meets Oct. 11

Nearly 300 LP-Gas men and women are expected to turn out for the annual North Eastern District meeting of the Liquefied Petroleum Gas Association to be held Thursday, Oct. 11, at the Hotel Statler, New York, N.Y., according to F. W. Frost, sales manager, Pyrofax Gas Co., who is in charge of arrangements.

Lt. Gen. Robert L. Eichelberger, celebrated commander of the U.S. 8th Army during World War II, will address the luncheon session.

Other speakers and their subjects will be John W. Oyler, assistant to the director, Natural Gas Production and Processing Division, Petroleum Administration for Defense, Washington, D. C., "PAD's Role in the Control Picture"; George Kelley, sales manager, Utilities Distributors, Inc., Portland, Maine, "A Full-Time Job"; Lee A. Brand, vice president, Empire Stove Co., and chairman, National Committee for LP-Gas Promotion, "What the National LP-Gas Promotional Program Has Done for You"; E. Carl Sorby, vice president, Geo. D. Roper Corp., "Actionizing Your Sales Ego"; Roy R. Johnson, vice president, Fuelane Corp., Liberty, N.Y., "What's Bothering You?"; John A. Ackley, assistant sales manager, Pyrofax Gas Co., New York, "The Educated Guess," and Howard D. White, LPGA's executive vice president, "Your Association and Its Progress."

Walter A. Naumer, vice president, Pyrofax Gas Co., and LPGA's district director, will preside at the meeting. Registration will start at 9 a.m. in the ballroom foyer and the morning session is scheduled for 11 a.m.

New Jersey

A meeting of the New Jersey LP-Gas Assn. will take place Oct. 23 at the Ritz-Carlton hotel in Atlantic City.

Guy Richdale, Jr, secretary-treasurer of the group, has announced the first speaker of the meeting as Sol Weil, of the Geo. D. Roper Corp., who will present a gas vs. electricity demonstration.

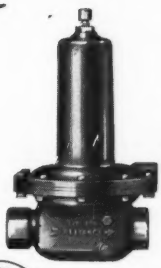
Ohio

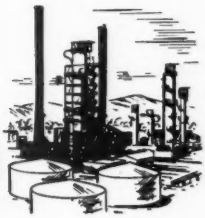
The Fort Hayes hotel, Columbus, will be headquarters for the Oct. 10-11 meeting of the Ohio LP-Gas Assn., ac-

Silent Masters OF HIGH PRESSURE GAS

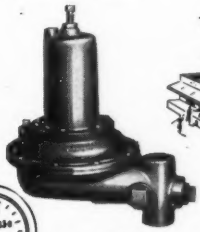
These High-Pressure Regulators are used by a large number of different industries. From the largest refinery to small industrial plants, they are always on the job, reducing high gas pressure to a low, steady flow of gas that can be utilized to the best advantage.

For complete specifications on High-Pressure Gas Regulators, request Bulletins 47A and 48A.





TYPE **HPR** is available in several models which allow inlet pressures up to 1000 lbs. (2000 lbs. in bronze) and reduces them to as low as 2½ psi. This wide pressure range, plus compact, rugged construction, makes this Regulator a natural for farm taps, general gasoline plant and refinery installations, and for controlling any high pressure gases.



TYPE **HPH** is recommended for smaller industrial plants where sensitive regulation and position lock-up are required. This Regulator may be used with inlet pressures up to 150 lbs. and the outlet pressures may be reduced to as low as ½ psi.

AMERICAN METERS

RELIANCE REGULATOR DIVISION

AMERICAN METER COMPANY
INCORPORATED

1000 MERIDIAN AVENUE, ALHAMBRA, CALIFORNIA

cording to H. E. Brumby, secretary of the group.

One of the preliminary speakers announced for the program is Tommy Thompson of Black, Sivalls & Bryson, Inc., Tulsa, who will participate in an LP-Gas carburetion forum. Other speakers will include H. Emerson Thomas, M. A. Ennis, and Milton Zare.

Tennessee

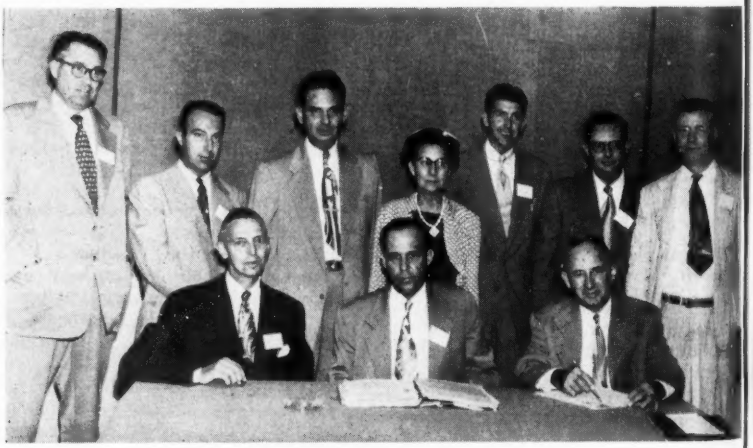
Elected president at the annual convention of the Tennessee LP-Gas Assn. Aug. 5-7 was G. T. Scott, of the Nashville Butane Gas Co., Nashville.

Association members, headquartered at the Andrew Jackson hotel in Nashville, also elected E. C. Ansley, Franklin Propane Gas Co., Winchester, vice president, and W. G. Petty, W. G. Petty & Son, Memphis, secretary.

Kentucky

Newly elected president of the Kentucky LP-Gas Assn. is R. N. Short, Red Devil Butane Gas Co., Franklin, succeeding Raymond Rains, Louisville, outgoing president. L. C. Stauble succeeds Melvin Gayer as vice president. Miss Frances Holliday takes over as executive secretary and Charles Nead is the new treasurer. The officers were elected at the fourth annual convention and trade show of the

KEITH DAVIS



Officers and directors of the Kentucky LP-Gas Assn. are, seated (left to right): L. C. Stauble, vice president; R. N. Short, president, and J. M. F. Hays, retiring secretary. Standing (left to right): Peter Wood, Melvin Gayer, L. T. Dixon, Miss Frances Holliday (secretary-elect), Elmer Roli, S. R. Harvey, and Raymond Rains, outgoing president.

McNAMAR TANKS

McNAMAR TULSA

are still Rollin'!

Yes, every day those popular McNamar LPG tanks are rolling off the assembly line to fill the requirements of dealers everywhere . . . however, the steel situation remains critical, and we suggest that you place your order now.

McNAMAR TULSA

McNamar Boiler & Tank Co.

PLANT NO. 1 — BOX 868, TULSA, OKLA. • PLANT NO.2 — BOX 206, E. ST. LOUIS, ILL.

Outgoing president, Raymond Rains, Louisville, congratulates R. N. Short, Franklin, newly elected president of Kentucky group.

group held Aug. 20-21 at the Seelbach hotel in Louisville.

The convention, attended by 275 persons, carried the theme of "Rules, Regulations, and Reasons," and the program reflected this. First-day speakers included C. A. Thomas whose subject was "Price Administration and Our Industry"; W. L. Martin, state fire marshal, who discussed state laws and regulations; and Col. Jack Majors.

Byron Beavers and Joe Leary discussed insurance problems. Other speakers and their subjects included: Keith Davis, Bryant Heater Div., "Practical Heating Applications with LP-Gas"; Roger Stevens and Bissell Smith, Harper-Wyman Co., a gas-vs.-electricity demonstration; and J. B. Holcomb, "Selling Should Be Fun."

A membership committee report revealed that membership in the Kentucky association showed an increase of more than 30% over the best previous year's enrollment, according to J. M. F. Hays, outgoing secretary.

Virginia

The Virginia Liquefied Petroleum Gas Assn. advised dealers at its Sept. 10-11 meeting to turn to farmers to supplement their sales.

W. S. Lander, of Charlotte, N. C., president of the National Liquefied Petroleum Gas Assn., spoke as the group wound up the two-day convention at the Hotel Roanoke in Roanoke.

Mr. Lander warned that a limited number of untrained installation and servicemen could hinder sales, and advised dealers to hold more training courses.

Ralph H. Fry, of Bristol, Va.-Tenn., was elected president of the organization.

Frey Hynson, of Manassas, and D. C. Earhart, of Staunton, were named vice president, and secretary-treasurer, respectively.

Approximately 100 dealers and 50 manufacturers of the association voted for new directors and elected the following board:

Thomas H. Sykes, Suffolk; Samuel Goode, Lynchburg; E. O. N. Williams, Richmond; George Noblett, Kilmarnock; R. F. Pecht, Lawrenceville; Ray Cassett, Virginia Beach; John B. Christiansen, Richmond, and Harold Pettit, Newport News.

A luncheon meeting, with Dr. Marcellus H. Stow, Lexington, Va., as principal speaker, concluded the two-day convention.

API Refining Division To Meet in San Francisco

The mid-year meeting of the American Petroleum Institute's Division of Refining will take place in San Francisco, May 12-15, 1952.

Headquarters for this, the 17th mid-year meeting, will be at the St. Francis hotel.

TITAN TANKMASTER

COMBINES

Engineering Perfection.. with *Precision Production*

THE SIGN OF GOOD CONTROLS

Here is an automatic water heater control that is designed for use with all gases — with a larger capacity — larger, easily removed filter — and with metal to metal valve and seat.

This highly efficient unit has Titan Snap Action Mechanism, 100% Safety Pilot and Safe Lighting (main burner must be off before pilot will light.)

TITAN TANKMASTER will give your customers long, dependable service. Write for specifications and complete information.

THE TITAN VALVE & MANUFACTURING COMPANY

9913 ELK AVENUE • CLEVELAND 8, OHIO

CALENDAR

Oct. 1-3—Assn. of Nebraska LP-Gas Dealers. Annual convention. Hotel Paxton, Omaha.

Oct. 4-5 — California Natural Gasoline Assn. Ambassador Hotel, Los Angeles.

Oct. 7-13—Fire Prevention Week.

Oct. 8-12—National Safety Congress. Chicago.

Oct. 10-11—Ohio LP-Gas Assn. Fort Hayes Hotel. Columbus.

Oct. 11—North Eastern District, LPGA. Hotel Statler. New York City.

Oct. 19—NGAA Southern Regional Meeting. Blackstone Hotel. Tyler, Texas.

Oct. 23 — New Jersey LP-Gas Assn. Ritz-Carlton Hotel. Atlantic City.

Oct. 29—Kansas LP-Gas Assn. Annual Meeting. Broadview Hotel. Wichita.

Nov. 5—Minnesota Petroleum Gas Assn. Curtis Hotel. Minneapolis.

Nov. 5-8—American Petroleum Institute. Annual Meeting. Waldorf-Astoria Hotel, New York.

Nov. 12 — Oklahoma LP-Gas Assn. Annual Meeting. Skirvin Hotel. Oklahoma City.

Nov. 13-14 — North Dakota LP-Gas Assn. Patterson Hotel. Bismarck.

Nov. 19-20—Montana LP-Gas Assn. Hotel Finlen, Butte.

Dec. 6-7—LPGA Board of Directors. Sheraton Hotel, St. Louis, Mo.

Dec. 7—NGAA Panhandle Plains Regional Meeting. Herring Hotel. Amarillo, Texas.

Dec. 7-8—Wyoming LP-Gas Assn. Annual Meeting. Townsend Hotel. Casper.

1952

Feb.—NGAA Permian Basin Regional Meeting. Odessa, Texas.

Mar. 24-26—LPGA Southeastern District Convention. George Washington Hotel. Jacksonville, Fla.

April 30-May 2—Natural Gasoline Assn. of America. Rice Hotel. Houston, Texas.

May 12-15—LPGA Annual Convention & Trade Show. Palmer House. Chicago.

May 12-15 — American Petroleum Institute, Division of Refining. Mid-Year Meeting. St. Francis Hotel. San Francisco.

Tentative Meter Code Issued by API-ASME

A tentative code providing a suitable basis for the installation, proving, and operation of positive displacement meters suitable for measuring liquid hydrocarbons to be purchased, sold, or exchanged in the petroleum industry or elsewhere has been issued by the American Petroleum Institute.

Entitled "Tentative ASME - API Code for Installation, Proving and Operation of Positive Displacement Meters in Liquid Hydrocarbon Service," the code was sponsored by the American Society of Mechanical Engineers and the API.

Omitted in the code are recommendations specifically applicable to meters in retail sales measurements because of possible conflict with the various state codes on weights and measurement.

The Code is available for $1 from the API Division of Transportation, 1625 K St. N.W., Washington, D. C.

Suffolk Gas Names Thos. Sykes President

Newly appointed president of the Suffolk Gas Corp., Suffolk, Va., is Thomas H. Sykes, who has previously served the company as executive vice president. Mr. Sykes is also president of the Nansemond Gas Corp. which distributes bottled gas in a 40-mile area surrounding Suffolk.

Other new officers of Suffolk Gas, a propane-air town plant, include James L. McLemore, Jr., vice president; Wilfred C. Gatling, Jr., secretary-treasurer; Charles C. Nichols, assistant secretary - treasurer; and James O. Watts, Jr., board chairman.

President Sykes has been with Suffolk Gas since 1942. He has served as secretary-treasurer of the Virginia LP-Gas Assn. for the past four years.

PROPANE "Safest Bus Fuel"

SAYS FLEET ENGINEER

By H. H. SLAWSON

ENGINEERS for the Chicago Transit Authority, whose fleet of 550 propane-propelled buses is the nation's largest of this type, are convinced that propane is safer to handle than any other fuel for municipal transit operations.

Addressing a Midwest safety conference in Chicago recently, Harold S. Anthon, engineer in charge of buildings and structures for the CTA, outlined to the safety specialists the safeguards of the system which promote accident-free operations. Digressing from his main theme, he also revealed the considerable economy effected by use of propane.

Primary consideration in selecting the type of fuel to be used, he pointed out, is the relative economy of the various types of equipment.

"The propane story," he said, "can be told on the basis of the fuel economies. The taxing structure in the price of diesel, gasoline and propane is identical, so the difference in cost of the fuel is, therefore, the difference in the fuel supplier's cost. We find that on gasoline and propane equipment we achieve approximately the same rate of fuel consumption, while the diesel equipment delivers approximately one-third more miles per gallon.

"Our costs for fuel on gasoline buses is approximately 5 cents per mile. In diesel operations this cost is approximately 3.6 cents per mile, whereas our propane costs an approximate 2.8 cents per mile. Thus, there is an immediate direct economy resulting from use of propane. In addition, it is anticipated that propane will not be considered a critical fuel in the same manner that gasoline or diesel fuel might."

Turning to the subject of safe operation with propane, Mr. Anthon said that, in compliance with the law, the CTA uses ethyl mercaptan as an odorant because this chemical compound is readily detectable long before an explosive mixture of propane and air can form.

Makes Gasoline Comparison

Examining further the relative hazards of propane, as compared with other types of fuel, he referred to the explosion characteristics inherent in fuel used in an internal combustion engine. Gasoline, he said, is handled in bulk storage with complete atmospheric contact, and this also occurs during transfer of the fuel to the bus tank, as well as during the carrying of the fuel in the bus tank.

"Propane," he continued, "differs from more conventional fuel in that it is confined during all stages of handling and there is no possibility of vapors reaching the atmosphere. There is, however, a possibility of leakage of propane through one of the fittings in the system that confines it. These leaks are readily detectable by sight, since a frosting will occur at the point of leakage; also by smell, due to the odorant used; and by hearing, because of the hissing sound of escaping gas.

"Propane will burn from such a leak with a torching effect, but with

little danger involved except where the flame impinges on surrounding objects. It is our standard operating procedure to stop the flow of propane at the point of leak before making an attempt to extinguish the fire. Contrast this with gasoline leakage and subsequent flame spread which will rapidly involve a major fire."

Describing the storage tank used on the Chicago buses, Mr. Anthon said its walls are ¼-inch steel boiler plate, designed to a bursting strength of 1000 lbs. per square inch. This, he asserted, will withstand major impact without rupture.

All connections to the bus tank, he said, are made in a recessed well in the tank. Furthermore, each connection is equipped with an excess flow valve, sized in accordance with the flow rate of the line, and will close if that line is ruptured. The bus tank is also equipped with a safety relief valve, set at 250 lbs. per sq. in., which is vented to the atmosphere at the roof of the bus. A solenoid valve on the liquid line between tank and engine is connected to the ignition switch and when the switch is turned off the solenoid valve closes.

Manual Valve Required

CTA rules, he also said, require that the garage crew close a manual valve on the liquid line at the fuel tank when the bus comes in at the end of its daily run.

Bulk storage facilities for the Chicago operations, Mr. Anthon went on, are all aboveground, horizontal tanks, in isolated locations, built to the best standards with all piping of extra heavy construction, welded and flanged. Each connection to the storage tank is equipped with an excess flow valve.

The unloading of fuel from the suppliers, Mr. Anthon related, is a pump operation, requiring approximately 40 minutes for a 4000-gal. load, and supervised by CTA's maintenance personnel. For fueling the bus a special fueling nozzle and special equipment on the bus tank are used, which, he said, has greatly simplified the operation.

Explaining further, he said that a nozzle is connected to the bus tank, a lever is operated on the dispenser and the dispensing meter is watched until it stops moving. Then the lever is released and the hose nozzle disconnected.

Inner Tank Utilized

"This simplicity of operation," he continued, "is due to an inner tank installed within the bus storage tank, which provides the expansion space required for temperature variations in the propane. This inner tank is approximately 20% of the bus tank's capacity and is connected to the point of application of the fueling nozzle in such a way that when the fueling nozzle is applied, the inner tank is closed off from the bus tank. Fueling then continues until the entire space between inner tank and bus tank is filled. Then the fueling nozzle is disconnected and the inner tank connection to the bus tank is automatically opened."

Operation of the lever on the dispenser, he said, "is what we like to think of as a 'dead man' control. This lever has to be held manually in the open position to permit fueling. Movement of the lever opens a valve which permits flow of propane into the bus tank and actuates a switch which starts the fuel transfer pump. Release of the lever automatically returns it to the 'off' position, thereby closing the liquid valve to the bus and shutting off the transfer pump."

"It is our opinion," he closed, "that propane can be handled in municipal transit operations more safely than other conventional fuels."

another example of UNITED'S

Extra Measure

"like having Our own engineering staff"

writes Hugh Leary wide-awake LP-Gas dealer of Greenfield, Indiana

Hugh Leary, co-owner and operator of Leary's Bottled Gas Service, Greenfield, Ind., knows it takes a lot of down-to-earth *operating know-how* to put an LP-Gas operation on firm, profitable ground.

"Back in 1948 when we started our present LP-Gas operation," writes Mr. Leary, "we knew we had a lot of problems to be ironed out. That's why we wanted to be sure the firm we contracted with would do more than just act as fuel and equipment supplier.

"We found our answer when we signed with UNITED. UPG representatives not only designed and helped build our bulk plant, but stuck right with us to help solve our operating problems, too. Now we *know* we can count on UNITED for dependable supply *plus* that 'extra measure'—*operating know-how!* It's like having our own engineering staff!"

Why not take a tip from Mr. Leary and put UNITED's "extra measure" to work for you? More and more progressive dealers are finding that for dependable supply *plus* that "extra measure"—*operating know-how*—it's UNITED!

COMPLETE SERVICE TO THE LP-GAS INDUSTRY

upg

UNITED

UNITED PETROLEUM GAS CO.

806 ANDREWS BUILDING MINNEAPOLIS 2, MINN.

Products...

Thermostatic Gas Valve

MINNEAPOLIS-HONEYWELL
REGULATOR CO.
Minneapolis, 8, Minn.

Model: Honeywell V5163.

Application: For use in many commercial applications including incubator and brooder houses and tobacco curing heating units, in addition to small homes, cabins, cottages, etc.
Description: This new modulating gas valve for space heaters combines a bellows thermostat, valve, minimum flame adjustment, and safety pilot in one unit. The built-in thermostat varies the positioning of the control valve according to room temperature. This provides a modulating burner flame which ranges from full volume to a pre-set minimum flame.

The safety pilot gives 100% shut-off in case of pilot failure. The control, suitable for use with all gases, is easy to install where space is limited.

An optional model, the Honeywell V5140, is available without safety pilot.

Vent Guard

VENT GUARD CO.
Lansing, Mich.

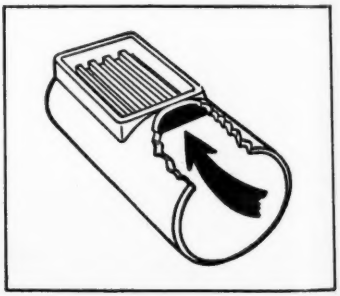
Model: "Vent Guard."

Application: Designed to reduce service troubles caused by clogged house regulator vents.

Description: This guard fitting resembles an elongated pipe cap but has a recessed grid on one side. The grid has 1/16-in. slots which bar insects from entering, yet the shoulder within the fitting serves as a stop. An Allen screw holds fitting in place.

Vent Guard is die cast of non-rusting, zinc-aluminum alloy. The manufacturer reports that the fitting has been field tested and is now being used by utilities in intermediate and high pressure services. It is manufactured to fit ⅜-in. iron pipe but can be adapted to fit other sizes.

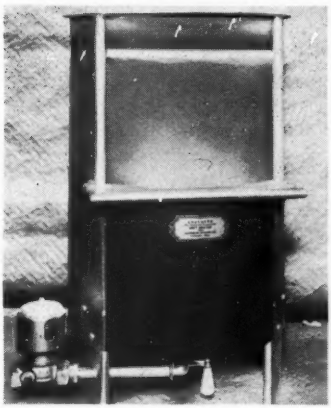
For butane and propane, it has an adapter for ⅜-in. O.D. copper and ½-in. O.D. copper.



Greenhouse Heater

SOUTHERN BURNER CO.
Box 3000, Chickasha, Okla.

Model: Southern C.



Description: The aluminum unit heaters, for group or unit installation to meet individual requirements, are round in shape, 12½ in. in diameter and 22 in. high. They operate under side benches with the front of the heater flush with the front of the bench. The aluminum construction enables heat to be reflected back upon the fast moving air, giving it more heat units.

According to the manufacturer, heat is circulated from the bottom up; it is not radiated; the temperature is seldom more than 5-7° warmer at the top than at the floor. Floor space covered: 150 sq. ft. in the North; 160-165 sq. ft. in central area; and 170-175 sq. ft. in the South.

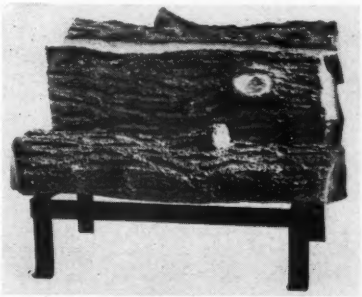
Heaters are open-flame types and do not call for vent pipe. They are available as automatic or standard models. A Minneapolis-Honeywell thermostat, on the automatic model, is set to operate between 50 and 70°.

The company also manufactures a vented, circulator-type heater designed especially for orchid houses.

Gas Log

ARMSTRONG PRODUCTS CORP.
Huntington 12, W. Va.

Model: L-24.



Description: This two-piece, rough oak log has been made to withstand handling and high temperatures to which it is exposed. The base assembly is fabricated from heavy bar steel, finished in black semi-matte enamel. It has a cast-iron burner and solid brass valve.

The AGA-approved log has an input of 24,000 Btu and is for use with all gases. Height: 17 in.; width, 24 in.; depth, 11 in.

PRODUCTS

Safety Valve

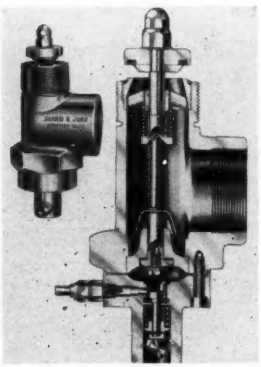
SHAND & JURS CO.
8th & Carlton Sts., Dept. B, Berkeley, Calif.

Model: "Safetiflo."

Application: Internal safety valve for LP-Gas truck tanks.

Description: Developed jointly by Shand & Jurs and the Phillips Petroleum Co., this valve has been designed to utilize LP-Gas pressure for fully automatic operation.

The valve, with five years' field testing, is installed in the tank outlet, with shutoff valve seat inside the tank shell. A 5/16-in. copper tube or pilot line is connected from the discharge side of the pump to the pilot side of a diaphragm in the valve body. The cast steel valve body is provided with a weakness groove and with the two-piece construction of the operating stem, permits partial or complete break-off of the valve at the tank outlet without interfering with positive, automatic valve shut-off. Should discharge lines or hose be ruptured or torn away, the resulting loss of pressure in delivery lines allows the valve to close automatically.



A folder describing the "Safetiflo" is available from Dept. B, Shand & Jurs.

Product Information

The Republic Powdered Metals Corp., 1540 W. 150th St., Cleveland, Ohio, has produced an aluminum paint suitable for cylinders. "Alumanation," as the product is known, is a heavy-duty coating made from aluminum, gilsonite, and asphalt (with or without asbestos fiber).

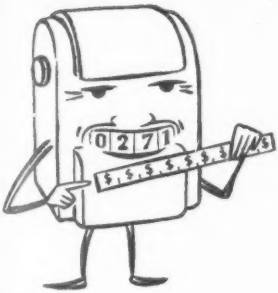
It is reported that the paint prevents further rusting or oxidation and provides protection against water, sun, alkali fumes, and other destructive elements. It provides insulation up to 15°.

Basic Organic Chemistry Covered in New Volume

"Basic Organic Chemistry" by J. Rae Schwenck, Ch.E., and Raymond M. Martin, M.S., has been published by the Blakiston Co. This 323-page book contains 45 illustrations.

The principles of organic chemistry have been correlated with those of general chemistry by using an electronic structure approach. The subject of organic chemistry is introduced by a study of carbon. From that point on, material is developed in logical manner. Each chapter contains a prologue, a group of questions, and charts as visual summaries.

The book is available from the Blakiston Co., 1012 Walnut St., Philadelphia 5, for $4.50.

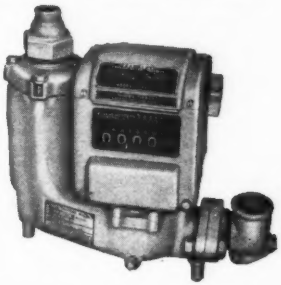


YOUR PROFITS ARE MEASURED *in Gallons*

In the L-P gas business, you buy gallons, and sell gallons. The dollar sign is just something you tack on after you add up the gallons. These dollars can't be any more accurate than your count of the gallons.

There's an accurate way to account for these gallons—Neptune Red Seal meters—nationally known for their ability to remain accurate years longer, with lower maintenance costs. Make your records permanent and build customer confidence, too, with tickets automatically printed by Red Seal Print-O-Meters.

You'll like Neptune's exclusive unit replacement plan. It insures prompt renewal of work-worn parts. Factory rebuilt replacements are always in stock.



PRESSURES TO 250 PSI.

To provide complete safety in handling liquid propane under all pressure conditions, Red Seal L-P gas meters are designed for working pressures up to 250 psi. Ask for Bulletin 779.

NEPTUNE METER COMPANY
50 WEST 50TH STREET • NEW YORK 20, N. Y.

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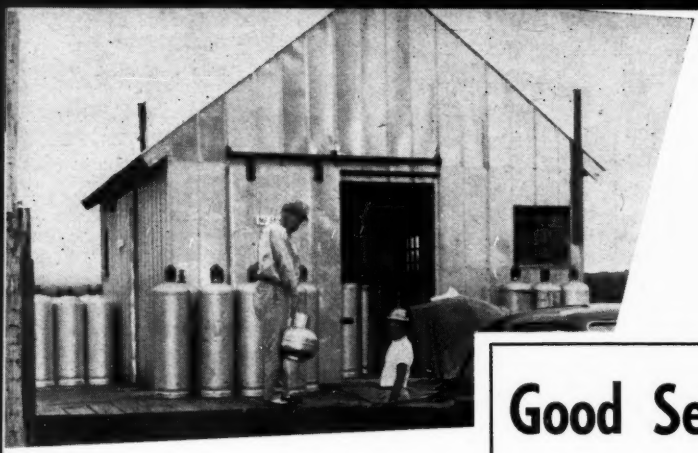


Good Service

helps build sales for New Jersey Dealer

By TED KNIGHT

AS one of the oldest bottle gas dealers in the state of New Jersey, George Stern has done wonders in building up his bottled gas load and selling appliances. Located at route #38 and Hampton Road which is in Merchantville, N.J., George Stern has been in business since 1926.

"When I first entered the bottled gas business, prospects that I contacted for bottled gas didn't even know what it was," says George Stern, owner of Stern's Bottled Gas Service, of Merchantville, N.J. "Today, the areas that we serve are so well familiar with it that we have been able to convert other fuel users to bottled gas and enjoy a splendid drive-in traffic from home owners and trailer owners."

From a handfull of customers, Mr. Stern has built up a list of 2600 users. About 98% of them are home owners and the balance is divided between commercial and brooder accounts.

In 1948, Mr. Stern decided to open a bottled gas appliance store adjacent to the bulk tank and platform from which he was operating his business. Influencing this was the range business that he did during that year—selling 400 ranges without a store.

"During that year I made a special drive to see what the appliance business had in store for us," says Mr. Stern, "and I told my routemen to call each customer's attention to his range in an effort to sell a new one. And we installed over 400 that year without having one to even show a customer!"

The new store is 42 ft. wide by 32 ft. deep, permitting the larger view to face a main traffic thoroughfare. The front portion of the store is devoted to the display of appliances and the rear to storage.

A second floor of the building has been rented to one of Mr. Stern's

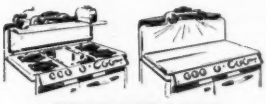
Kitchen-proved Conveniences Sell the

O'KEEFE & MERRITT

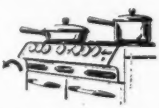
Automatic Gas Range

Only O'Keefe & Merritt Has These Most-Wanted Features

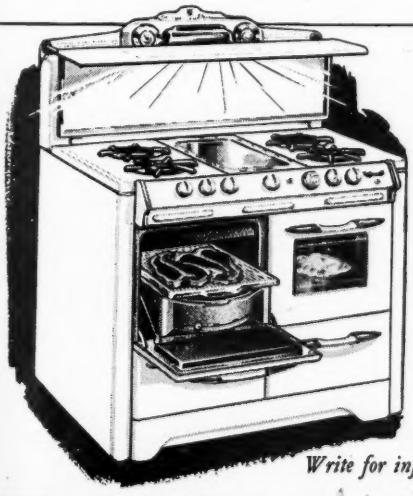
GRILLEVATOR BROILER—Instant, fingertip choice of 5 broiling levels.



VANISHING SHELF-COVER—Both a stepsaving shelf and a smart cover—in one patented feature.



KOOL KONTROL PANEL—Conveniently slanted knobs never get hot.



BONUS Extras for *her!*

Your customer expects every work-saving, time-saving luxury of modern cooking! That's why thousands of home makers choose the new O'Keefe & Merritt... *America's Most Modern Gas Range.*

BONUS Profits for *you!*

Take advantage of her preference for these well-advertised extras. Join the thousands of dealers who know that sales and profits grow with O'Keefe & Merritt!

Write for information on available models today!

O'KEEFE & MERRITT CO. 3700 East Olympic Blvd., Los Angeles 23, Calif.

routemen and because his quarters are entirely operated by bottled gas, having a range, refrigerator, hot water heater, house heater and a bottled gas clothes drier, it is used for demonstration to prospective customers for gas or additional appliances.

More than half of the Stern Bottled Gas Service's customers are on a double cylinder hook-up. Many still retain the one bottle plan because they get such prompt service. Mr. Stern operates three delivery trucks and has four employes besides himself who cover the duties of weighing gas, delivering it and selling appliances.

The firm charges $18 per installation up to 15 feet of tubing and then charges an additional 15 cents per foot thereafter. If only range is installed, Mr. Stern feels that a 100-lb. cylinder will suffice, but if another appliance is added, then the customer is definitely told he must add the second cylinder.

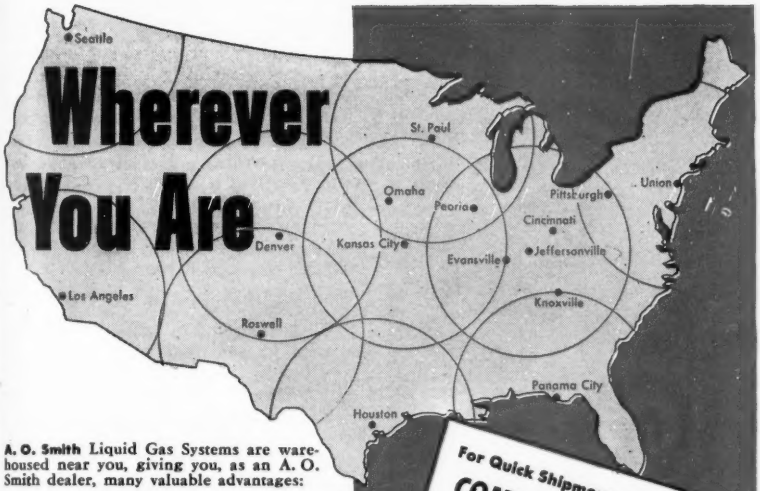
Because of the increase in building throughout the state and the use of bottled gas by vacationers and others making conversions, this firm has been able to pick up on an average of 10 new users per week during 1951.

"About 70% of our customers have ranges," explains Mr. Stern, "and 28% of them have water heaters in addition. The balance have more than these two appliances."

As an inducement to increase usage, Mr. Stern has a special sliding scale for bottled gas. This is based on the number of 100-lb. cylinders used during a year. These rates are: one tank —$13.50; two tanks—$12; three tanks —$11; four to five tanks—$10; 6 to 7 tanks—$10; 8 to 9 tanks—$9; 10 tanks or more—$7.50 per year.

A postal card is attached to all tanks and when one is running low, the customer mails it in. On double tanks, the customer is told to mail the card when one tank has run out. Cus-

A full line of bottled gas appliances makes it easy for Mr. Stern to demonstrate them to customers.



A. O. Smith Liquid Gas Systems are warehoused near you, giving you, as an A. O. Smith dealer, many valuable advantages:

- **Better freight service.**
- **Lower transportation rates.**
- **Direct-to-yard truck deliveries.**
- **Special benefits which A. O. Smith dealers enjoy exclusively!**

With a superior product—made by A. O. Smith Corporation—this convenient warehousing service assures customer satisfaction . . . more profitable business for you. If you are not yet an A. O. Smith Dealer, mail the coupon.

A. O. Smith Liquid Gas System with Exclusive Vapor Dome*—all controls and fittings in one convenient spot.

*Patent Applied For

For Quick Shipment or Pick Up

COMPLETE STOCKS

of A. O. Smith

Liquid Gas Systems

are maintained at Cincinnati; Denver; Evansville; Houston; Jeffersonville, Indiana; Kansas City; Knoxville, Tennessee; Los Angeles; Omaha; Panama City, Florida; Peoria; Pittsburgh; Roswell, N. M.; St. Paul; Seattle and Union, New Jersey.

Fast rail shipments at low F.I.T. rates, west of the Mississippi, from Houston.

A.O.Smith

LIQUID GAS SYSTEMS

A. O. Smith Corporation
Dept. BP-1051, Milwaukee 1, Wisconsin

Send all facts on A. O. Smith Liquid Gas Systems and how they mean more profits for me.

Name_____

Firm_____

Address_____

City_____ Zone____ State_____

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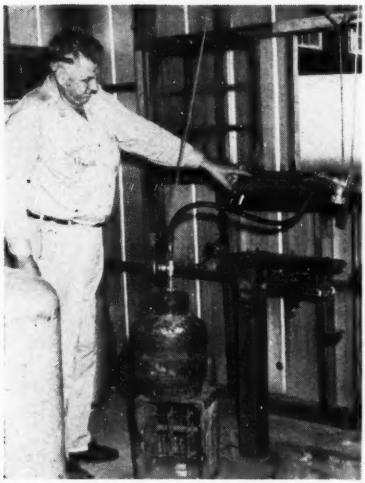
Boston 16 • Chicago 4 • Denver 2 Houston 2 • Los Angeles 22 • Midland 5, Texas • New York 17 • Philadelphia 3 • Pittsburgh 19 • San Francisco 4 Seattle 1 • Tulsa 3 • Washington 6, D.C.
International Division: Milwaukee 1



George Stern points to the counter weights that make it easy for the nozzle to be attached to cylinders when putting in gas. The nozzle is held up by a rope and pulley.

tomers can also order by telephone.

Mr. Stern uses a day-book to keep track of his operations. Each day that he receives cards or calls for service, he lists them on pages for the following day's operations. Then that evening he makes up a route for each of his deliverymen to cover and they have that list when they leave the plant the following morning.

As routemen return from a day's deliveries, they leave their route book of duplicate sales slips. The original has been given to the customer. Then in the day-book, next to each call made, is entered the initials of the routeman having made that stop in addition to other information as to the amount of sale, quantity, charge, balance and remarks.

"Our day-book gives us an accurate day-to-day account of our operations," says Mr. Stern. "By keeping this book up-to-date and accurate, we know exactly how we are operating our business and every customer called upon."

As an average, Mr. Stern says that the owner of a single appliance, such as a range, uses about three or four cylinders of gas a year. A double appliance user consumes about 800 lbs., or eight bottles a year.

Watches Customers' Needs

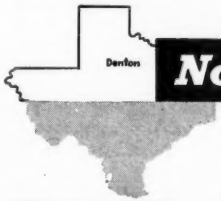
Mr. Stern checks his day-book regularly to see that these users are sending in their cards or phoning for gas. When he notices that a certain consumer is about due, he mails out a reminder letter and a card. If he doesn't hear from that customer, he tells the routeman to make a stop when he is in the district next time.

He permits his customers to have credit for one cylinder of gas. After that the customer is on a C.O.D. basis. About 5% of his customers owe him money at the end of the year, but his C.O.D. system minimizes the total accumulated amount.

"From 1945 to 1948 I had almost all my customers on a single cylinder plan," says Mr. Stern, "because I couldn't get enough cylinders. It was hard keeping up with deliveries until late 1948 when I began to get them at the rate of 200 per month. Then I doubled up on the majority of my accounts and this gave us a breather."

In order to make the most of the routeman's operations, each of them must call in three times a day. Once when they are half way to the farthest point of their schedule, again when they are at their farthest point and the third time when they are half way back again. This gives the office the opportunity to respond to orders received during the day.

As Mr. Stern feels that his route-

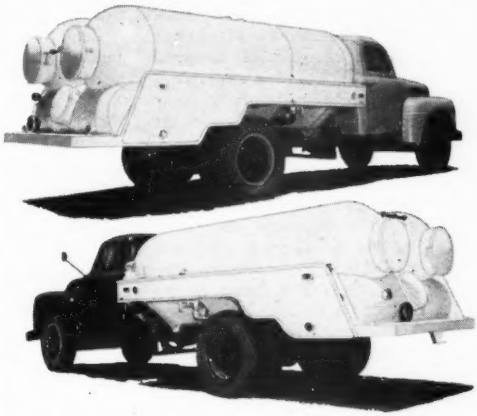


North Texas Tank Co.

Manufacturers of Fine LP-Gas Equipment

- Production Built
- Production Priced
- Two Recessed Relief Valves in Each Tank
- Exceptionally Well Balanced
- No Frame Reinforcing Necessary
- Motor Fuel Tank in Rear Well Protected
- Minimum Weight
- Maximum Pay Load

Prices and specifications on request.



DeLuxe Model Twin Barrel Truck Unit

These units are built on a production line basis and it is our aim to manufacture tank trucks within the price range of the average LP-Gas Dealer. These units have satisfactorily met the needs of dealers in most states, and numerous companies have disposed of heavier equipment and are replacing entire fleets with this lighter weight unit.

As an additional service we are able to furnish most types of new truck chassis, usually at a saving. This enables a dealer to select a truck and tanks of his choice, completely equipped and ready to drive away. Two to three days is necessary for mounting tanks when truck chassis is furnished by the customer.

TRACTOR TANKS

Farmall Tractor picture shows custom built tractor tank replacing gasoline tank. Trac-tor Custom tanks are complete with brackets and fittings. Write for tank prices covering all popular models of tractor and motor fuel equipment.

North Texas Tank Co.

P.O. Box 519 Denton, Texas Phone 146-1323

Motor Fuel Tanks - Domestic Tanks - Spheres - Truck Tanks - Tractor Motor Fuel Tanks

men are his best salesmen, he offers them a flat inducement bonus of $10 for each new range, water heater or other appliance that they sell. And seldom does a week go by that his routemen do not have an extra bonus in their pockets.

If bottled gas has to be delivered to customers after hours, on week ends or Sundays, an extra $2 charge is made. Customers are thus assured of 24-hour service, but the extra cost influences users to anticipate their needs and order fuel for regular deliveries.

Driver Gets the Fee

The $2 is turned over to the routeman making the delivery and each driver lets it be known when they are available for this extra duty. The firm therefore does not have to go out of its way to hire extra help, but can expect its own men to work on "off duty" periods.

When Mr. Stern first opened his store, he hired a salesman to seek new gas accounts or appliance customers. The salesman was paid $25 a week, plus car allowance, and 10% commission on all sales. As appliance customers soon became the main objective of a salesman, the original arrangements were changed to provide car allowance, plus 15% on appliance sales.

"We originally gave the salesman a salary because he was seeking gas consumers as well as appliance customers," explains Mr. Stern. "Then when we put him solely on appliances, we made the change which was of benefit to us both."

The firm charges customers $3 per range conversion. It covers a radius of 25 miles around its location, taking in Camden county, Gloucester and parts of Burlington county, N.J.

Besides the store, the firm has a bulk storage tank of 7500 gals. capacity and two loading stations 20 ft. x 35 ft. and 28 ft. x 32 ft.

Mr. Stern fills his storage tank with 4400 gals. one week and has two deliveries the following week. By spacing out the days evenly, his storage tank always has an ample supply of gas even if he doesn't get his delivery on time.

The firm does a large bottled gas business from nearby trailer camps. Trailer owners have their 20-lb. tanks filled for which they are charged $2.50. As most of these trailer owners are week-end users, it is figured that a tank of gas lasts them about four to five months.

"Many of these trailer owners later build homes in Jersey," says Mr. Stern, "and then turn to us for their gas and appliances. It pays us, therefore, to keep them coming to us and we keep track of this trade."

As a side-line which was formerly a hobby, Mr. Stern raises turkeys that are sold around Thanksgiving and Christmas. Last year he sold over 4000 turkeys to customers from his store. Another way of introducing new prospects to Stern's bottled gas service!

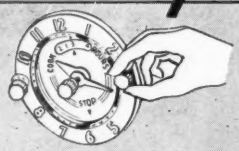
Safety Council Publishes Accident-Prevention Book

The second edition of "Accident Prevention Manual for Industrial Operations" has been published by the National Safety Council.

This is an 800-page book covering such subjects as permanent structure and plant layout; maintenance and maintenance crews; boilers; pressure vessels; refrigeration equipment; machine guards; materials-handling hazards; hand and portable power tools; welding and cutting; electrical hazards; flammable liquids; fire prevention; fire control; personal protective equipment; industrial health engineering; industrial poisons; medical

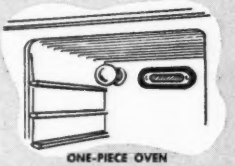
Modern Maid
GAS RANGES

MODEL 9300 PAC



AUTOMATIC OVEN TIMER

Brings fully automatic cooking to the low price field. Equipped with 100% safety shut-off.



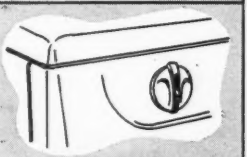
ONE-PIECE OVEN

Rounded corners with no seams provide better heat distribution and easier cleaning. Insulated with extra heavy Fiberglas.

SALES APPEAL GALORE! . . .

With all these outstanding features brought to the low-price field, prospects sell themselves on the beautiful new Modern Maid line of domestic cooking ranges.

For a fast moving high prestige product, contact our factory representative or factory warehouse in your vicinity. Write for details.



RECESSED MANIFOLD COVER

Gracefully curved and recessed manifold cover protects valve handles from heat, adds interest to the modern design.

TENNESSEE STOVE WORKS

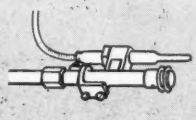
Three Generations of Stove Building

CHATTANOOGA 1, TENNESSEE

LPGA

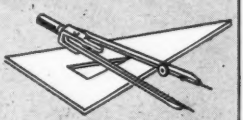
INDIVIDUAL BURNER BOWLS

Porcelain enameled burner bowls formed with raised ledge to catch any spillovers. Easily removed for washing.



AUTOMATIC OVEN LIGHTER

No More Matches . . . the oven burner lights automatically when the heat control is turned on. In case of pilot failure gas will shut off automatically.



CLEAN MODERN DESIGN

Gracefully curved massive backguard, contour front, recessed manifold cover, slanted bright chrome door handles and acid resistant titanium porcelain bring the "new look" to every kitchen.

services in industry; safety organizations and training; accident records, analysis, and costs.

Reprints of the various sections of the second edition have been bound in paper and may be purchased separately.

Detailed description and price information may be obtained by writing the National Safety Council, 425 N. Michigan Ave., Chicago.

10 Ways to Collect Old Accounts

By Ernest Fair

THE first rule in collecting old accounts is to understand the account. The method is then limited only by the dealer's ingenuity.

Any dealer, with a little thought, can add to the following list:

1. Print a checkerboard on your letterhead on which is depicted the opening move. Write: We made the first move when we gave you credit. As the game stands "it's your move."

2. Print or draw a hand on your letterhead. Punch two holes and tie a string around the forefinger. Write: A reminder to send us your check, etc.

3. Attach a bit of hay to your letterhead. Write: "You don't owe us $2000, you only owe $35.28—but it ain't hay!"

4. Paste a four-leaf clover to your letterhead (one can easily be faked by adding another leaf). Write: "Just for luck! A lucky day for you and for us a lucky check."

5. Special days: St. Valentine's—A "heart-to-heart" letter. Thanksgiving —enclose a turkey feather ("Time to talk turkey"). Columbus Day—"If Columbus kept putting it off, America never would have been discovered," etc.

6. Attach a paper clip to your letterhead. Write: Use this to attach your check to this letter and you will be relieved of any further worry in regard to our bill of . . . .

7. For poets. A letter around a jingle.

8. A letter with heavy black obituary border "Died . . . . (date), our faith in your good intentions."

9. Prizes to salesmen for the collection of old accounts.

10. Blotter reminders delivered by salesmen.

Death Takes "Rudy" Wagner, Long with LPG Industry

Rudolph G. Wagner, for the past 10 years sales manager and butane department manager for the Ransome Co., Emeryville, Calif., died suddenly Aug. 29 at the age of 59.

"Rudy," as he was universally known to his intimates, was a native Californian, born in Sonoma. He attended the University of California before joining the Standard Oil Co. of Calif. to work on its pipe line at Coalinga. From there he was transferred to the company's refinery at El Segundo. His next position was in the sales department of the Associated Oil Co., followed by five years with Parkhill-Wade, Los Angeles, in charge of fuel distribution.

From this wide and varied experience, he became an authority in the LPG industry and was widely known along the Pacific Coast. He was a veteran of World War I and a member of Woodland Lodge F. & A.M., Sacramento.

Funeral services were held in Oakland, Calif., Sept. 1.

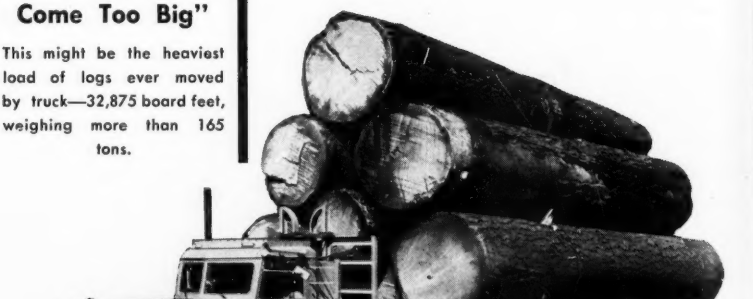
Butane-Propane POWER SECTION

Installations CARBURETION Conversions

Roll-Rock 3 2 Up, butane, Peterbilt truck operated by Feather River Pine Mills, Feather Falls, Calif.

"The Jobs Never Come Too Big"

This might be the heaviest load of logs ever moved by truck—32,875 board feet, weighing more than 165 tons.



LOGGING with BUTANE

By CARL ABELL

"WE move some pretty heavy loads," said Lee Simmons, superintendent of equipment for the Feather River Pine Mills, Inc., at Feather Falls, Calif., considerable pride revealed in his expression. "The biggest we ever brought in weighed over 165 tons—32,875 board feet of sugar and ponderosa pine. That might be the biggest load of logs that was ever hauled on a truck. Yes, a butane-powered truck did the job, too!"

While I caught my breath another big butane-fueled logging truck came down off the hill with its pyramid of 11 great pine logs. "That's just a moderate load," explained Simmons. "Only about 20,000 board feet—roughly 100 tons." Just a little load! Enough to make about five ordinary houses.

We walked over to the pond where the unloading cables were being connected below the load of logs. Close up, the magnitude of the truck and the load was staggering. The big logs bulged out beyond the ends of the 12-foot bunks. The top of the pyramid towered 20 feet above the roadway. The 18 huge tires stood nearby as tall as a man. The whole thing was almost uncomprehensibly large—too wide, too high, and too heavy to go out on the public roads.

The great electric crane tossed the load over the side into the millpond. A huge geyser erupted from the water, and settled into waves which stirred the logs to the far edge of the pond. The crane picked up the trailing "dolly," with its tons of axles and tires, and set it down piggy-back on top of the truck. The driver gunned the 325-hp. Hall-Scott engine, and the big Peterbilt truck took off up the hill at almost roadster speed.

"We use these Series 400 Hall-Scotts on butane," explained Simmons, "because the combination gives us the highest horsepower we can buy in a truck. That horsepower is pretty valuable to us. It enables fewer men to move more logs out of the woods than would be possible with smaller outfits. The drivers love them, and take pride in the size loads that they can handle. The one who just left brought in our biggest load of this season the other day—30,000 board feet. Now he is asking for a load that will make him put his transmission down into compound low."

"How about the maintenance cost on those big trucks?" I asked.

The giant logging truck dwarfs the 20,000-gal. LP-Gas tank and the service mechanic.

In foreground a 150-hp. diesel; behind, 325-hp. butane-burning Hall-Scott, both loaded to capacity.

"Not bad," was the answer. "Of course we break a certain number of axles, and air compressors give about the same amount of trouble that they do on smaller trucks, but the engines stay in remarkably good shape. The crankcases never get a heavy coating of sludge, like our diesel engines do. Our oldest butane jobs went into service in 1947. They have had new rings, and an occasional valve grind, but we have never had to give one of them a major overhaul. That's something new in our experience."

"What do you do in the way of preventive maintenance," I wanted to know.

"Nothing out of the ordinary. We change the crankcase oil every two weeks, just as we have always done. This operation is very dusty, so we service the air cleaners and oil filters at the same time that the oil is changed. We get quite a lot of dirt out of the oil filter sumps, and you can imagine what the air filters collect. Chassis lubrication is also on a regular schedule.

"We have three mechanics on the trucks and light rolling stock. One man is on the daytime shift, and he works principally on emergency jobs and heavy repairs. The other two come on in the afternoon. They service the 9 big logging trucks and the lighter units that we use in maintaining the roads and for general transportation. The logging truck tanks each hold 200 gallons of butane, and the average con-

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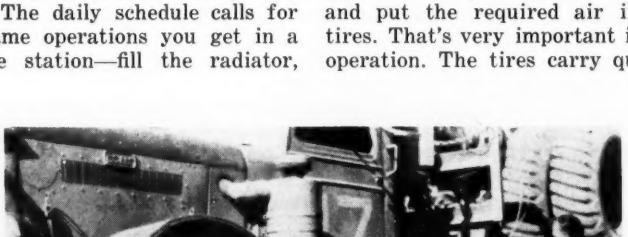
Sold only through distributors or to original equipment manufacturers

CARBURETORS for LP-Gas

One hundred tons of logs roll into the pond.

day. They are refilled every evening. The daily schedule calls for the same operations you get in a service station—fill the radiator, check the oil, check the battery, and put the required air in the tires. That's very important in our operation. The tires carry quite a



Trucks are serviced after each day's work. The average fill is 70 gallons of LP-Gas.

load. Under-inflation would ruin them in a hurry. They are not only hard to get, they are also costly. You could buy three new automobiles for the price of the tires on one of these logging outfits! We use the same tire that goes on the large earth-movers, with what is called 'hard-rock lug tread.' They are the most satisfactory tires we can get for our roads, which are pretty rugged."

"What about these private roads?" I asked. "Aren't they a terrific expense?"

"You bet they are. But we have a big operation, and we must keep it running. The lumber out of our mill supports about 250 employes. We can only get lumber out of the mill if we keep putting logs in the pond. To get our logs, we must go out from 10 to 25 miles over rough country. Those nine company trucks, and the 'gyppos'—that we hire to bring in the logs that we deck up to run the mill through the winter—must keep moving fast to supply the mill. It's cheaper to keep up the roads than to slow down the trucks. We keep 8 bulldozers, 2 road blades, and 2 sprinklers on the maintenance of our roads all the time.

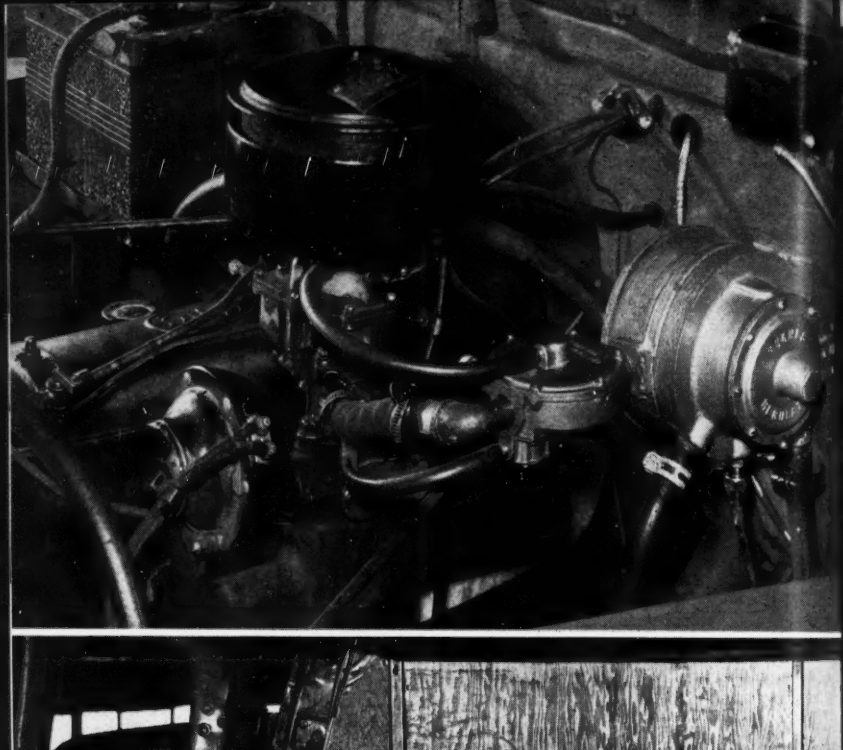
"You understand, of course, that the trucks do not go out and pick up the logs where they are cut. We use caterpillar tractors to concentrate the logs in 'yards' which are located on our roads. The trucks are loaded by power cranes. Everything is geared to keep those trucks moving fast, with the biggest possible loads. Right now we figure that they are worth about $12 per hour each. We try to turn those hours into productive work."

Lee Simmons, superintendent of equipment, keeps in touch with the big trucks by two-way radio.

Simmons looked up the road at the 20,000-gallon storage tank. A delivery truck from Dunning's Butane-Propane Service, at Oroville, was filling the tank. "This butane sure does a job of keeping the engines out of the shop," he remarked.

The two-way radio in his pickup began making funny noises. He lifted the receiver, and went to work with the switches and the conversation. A moment later he hung up the instrument and rushed into the parts room. Two men came out and tossed parts and tools into the pickup. They all climbed aboard, and Simmons shouted to me, as he backed the car around, "No. 2 loader broke down. Come back some other day when we are not so busy."

They disappeared up the hill in a cloud of dust. Two hundred and fifty employes needed logs in the pond!



LP-Gas bulk storage plant of Omar, Inc., located at south Omaha branch. Tank has 30,000-gal. water capacity.

"Pilot" Conversion of 130 Trucks May Influence Changeover on National Fleet

By ROBERT D. COONLEY
Editor, "Omar Caravan," Omaha, Neb.

FROM May to July, 1951, 130 bakery route trucks of Omar Inc., Omaha, Neb., were converted to LP-Gas. The company fuels these trucks from its own bulk plant at Omaha.

The time-table on this conversion was as follows:

39 trucks at south Omaha branch were converted in May.

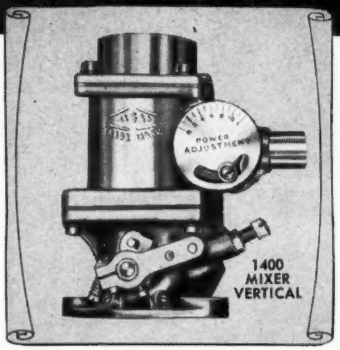
30 trucks at Lincoln (Neb.) branch were converted during June.

61 trucks at Omaha north branch (located at Omar's Omaha branch were converted during June and July.

Each truck is equipped with two removable steel cylinders specially designed to operate in a horizontal position. They are 12½ in. in diameter (to fit beneath storage shelves in the truck) and 4½ ft. long, with a capacity of 17 gals. each. Each cylinder is clamped on two wooden skids mounted on the floor of the truck and is connected to the fuel line by flexible rubber

Opposite page (top): View under hood of Omar route truck converted for use of LP-Gas. Valve on line at left of picture shuts off gasoline fuel supply. This can be opened for emergency use of gasoline. Bottom: Fred Peterson, of Omar's south Omaha garage staff, changes an empty cylinder on a retail route truck. Cylinders are designed to operate on their sides and to fit beneath the bottom shelf used for carrying bakery products.

IMPROVED ENGINEERING AND ADVANCED DESIGN



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Pioneers in the LP-Gas Industry, ALGAS. is constantly improving their equipment to serve better the expanding needs of their field. Now ALGAS offers a new, improved design in their 1400 Series Mixers that greatly expands the flexibility of installation. Write today for information and specifications.

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Los Angeles 21, California

Walt Fredrickson, garage foreman at Omar's south Omaha branch, fills LP-Gas cylinder on automatic shutoff scale at the bakery's own LP-Gas bulk plant.

pressure hose. A vent pipe extends through the roof at each side just above the rear doors of the truck.

Existing carburetors were supplied with a standard type conversion unit (heat exchanger, vaporizer, pressure reducer, etc.) A manual shutoff valve was inserted in the gasoline fuel line so that the trucks can be run on gasoline by shutting off the LP-Gas supply at the cylinders and turning on the gasoline valve.

Timing adjustments, etc., were made to secure the best performance and economy from LP-Gas, but no major changes were made in the motors.

The trucks are standard ½-ton panels, mostly GMC and Chevrolet with a few Internationals. They average between 200 and 300 miles per week. Total mileage runs 25,000 miles per week for short hops and country driving.

Six experimental route trucks were operated on LPG at Omaha for several months before the bulk plant was installed. During this time various types of carburetor conversion equipment were tested, several outside the truck, and also the final inside installation, on both country and city routes.

The success of these tests led to the installation of a 30,000-gal. storage tank at Omar's south Omaha sales branch, 2614 Deer Park Blvd. The bulk plant is well back from the street and away from the building between the entering driveway and a rail siding which runs at the edge of the property.

The installation includes the main tank and a concrete loading dock with space for temporary storage of several hundred cylinders within one fenced enclosure and a smaller fenced area for tank car unloading equipment. It is equipped with two automatic shutoff scales and outlets for filling the cylinders by weight. A third filling

Omar route truck with experimental butane-propane motor fuel unit mounted on roof.

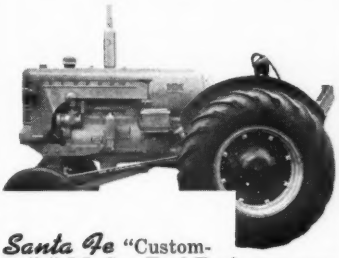
Santa Fe

"Custom-Built"

L-P GAS TANKS

FOR

TRACTORS AND TRUCKS



Santa Fe "Custom-Built" LP-Gas Fuel Tanks are specified as standard equipment by many tractor manufacturers. They are available for any Tractor, Truck or Bus requirement.

Designed for fast, simple and inexpensive installation. Many stock models are available, including brackets—others are fabricated to specifications. They are licensed and bonded in states where required. Tanks comply with N.B.F.U. requirements. U.L. approved valves—excess flow protection.

Highest standards of engineering, materials and workmanship.

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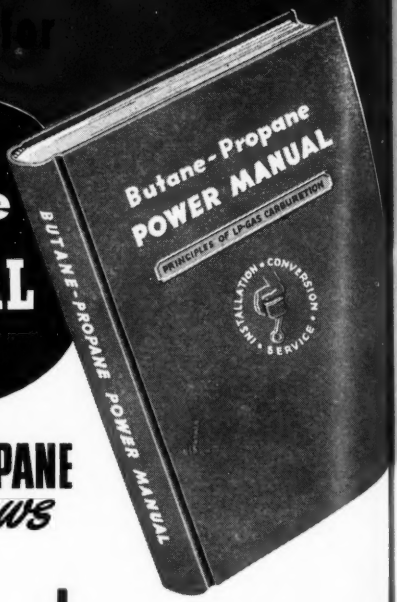
Butane-Propane POWER MANUAL



Published by **BUTANE-PROPANE** *News*

The Butane-Propane Power Manual will be a complete, authoritative guide covering the use of butane and propane in internal combustion engines. Published for the rapidly expanding LP-Gas Power Market, it will be full of sound and technical information, much appearing in print for the first time.

Thousands of bulk plant operators, dealers and servicemen have found they need more facts on installation methods, equipment and service. The Power Manual gives these facts. It contains complete specifications and step-by-step directions. It shows how to handle this new business profitably and with assurance.

About the Author . . .

Carl Abell is nationally known as a technical lecturer and writer on automotive subjects. A member of the S.A.E. for over 20 years, he has contributed many of the articles published in Butane-Propane News on LP-Gas engines.

He has been identified with the automotive industry on the West Coast and in New York since 1921, having been employed as technical writer by Fageol Motors, American Car and Foundry Co., Hall-Scott Motor Car Co., and the Ethyl Corp.

A deluxe edition in handy pocket-size for ready reference

The Power Manual is profusely illustrated with actual photographs of installations. Diagrams and engineering drawings show each step in installation and servicing . . . the tools you need, testing methods, typical problems and how to solve them safely and quickly.

350 Pages
Size: 5⅝"x7⅞"
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- The Nature and Control of Combustion
- Factors Affecting Economy and Power

PART 2
LP-Gas Carburetion

- LP-Gas Carburetors
- The Regulator or Converter
- Fuel Supply—Vehicle Tanks and Equipment
- Natural Gas Carburetion

PART 3
Making the Conversion

- Planning the Installation
- Checking the Engine Condition
- Raising the Compression Ratio
- Cooling Intake Manifolds
- Truck and Bus Conversions
- Tractor Conversions
- Passenger Car and Taxi Cab Conversions
- Industrial and Special Applications
- Ignition Problems

PART 4
Installing and Adjusting LP-Gas Carburetors

- Principles Applicable to All or Several Makes
- Instructions for Installing and Servicing the Various Makes of LP-Gas Carburetors Now on the Market.

PART 5
Maintenance and Trouble Shooting

- Lubrication of LP-Gas Engines
- Trouble Shooting

PART 6
Bringing in the Business

- Selling LP-Gas Carburetion
- The Storage and Handling of LP-Gas

Appendix

Handy Tables in Text

Ready November 15th

Pre-Publication Price $3.5

Less 20% in quantities of ten or more. In California, add 3% for sales tax. Orders from individuals must be accompanied by amount of purchase unless credit has been established.

BUTANE-PROPANE NEWS
A JENKINS PUBLICATION
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outlet without scale is not used in current operations.

Empty cylinders are returned from the Lincoln and north Omaha branches on semi-transports used to carry fresh baked goods to the branches each night. Full cylinders are taken to branches on the same transports. The Lincoln branch is about 65 miles from the bulk plant, and north Omaha branch about 10.

The company has six bakery plants and 40 sales branches. Bakeries are located at Columbus (Ohio), Indianapolis, Milwaukee, Omaha, Hamilton (Ohio), and Peoria. Omaha Bakery has two sales branches in Omaha, one each in Lincoln, Des Moines, Corning and Carroll, Iowa. Only the trucks in the three Nebraska branches are converted to use liquefied petroleum gas.

Maintenance records and operating costs of trucks at the branches will be used to determine the comparative cost of using LP-Gas and gasoline on Omar's type of fleet operation.

Century Carburetion Given Underwriters' Approval

Notice has been received by Century Gas Equipment Co., Lynwood, Calif., that Century carburetion for LP-Gas, automotive type, has been listed under Underwriters' Laboratories, Inc. and may now carry the insignia.

Underwriters' Laboratories put various Century units through extensive

MANCHESTER TRACTOR TANKS
give Custom Conversion

For the type of tractor illustrated they provide streamlined, factory-installed appearance. The driver has unimpaired vision and protection thru built-in hot air stops, and combination hood supports.

Tanks come equipped wi'h mounting brackets requiring no drilling; installation time is reduced to an absolute minimum — no disassembly of steering column.

All valves are UL approved and conform to all industry standards.

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endurance, freezing, accelerated aging and extraction tests resulting in the approval which showed Century products to be built to withstand accelerated aging and exposure to LP-Gas fuel without excessive deterioration, that the assembly and operation is such that devices will withstand repeated operations for an appreciable time, and that components have suitable strength to withstand pressures encountered in service with a more than adequate factor of safety.

"Algas" Equipment Approved For Motor Bus Use

Notification of the approval of their carburetion equipment has been received by Robert E. Barnes, manager of the carburetion division of American Liquid Gas Corp., Los Angeles, from A. G. Hilf, vice president in charge of production for the Fageol Products Co. of Kent, Ohio, a subsidiary of the Twin Coach Co.

Final approval of American Liquid Gas equipment is the result of more than a year of testing, and demonstrations conducted in factory and field proved many advantages not available from gasoline or diesel.

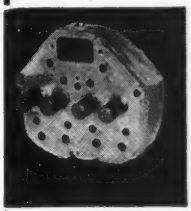
South Carolina Association Presents Engine to School

Several months ago, the South Carolina LP-Gas Assn. announced its intentions to secure for Clemson College, the engineering and agricultural college of the state, a demonstration engine operating on liquefied petroleum gas.

The engine, a Model U-1 International Harvester power unit of 16 to 25 hp., equipped with gasoline and LP-Gas carburetors, has been installed

HEISLER HP PRODUCTS

NEW LP GAS CONVERSION FOR FARM TRACTORS



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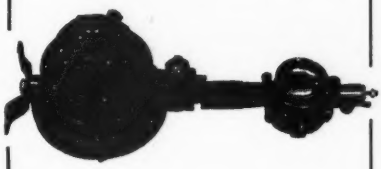

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in the gas engines laboratory at the school, and was put into operation for the fall semester.

According to Thomas E. Thornhill, of the Seaboard Gas Co., Charleston, S. C., who installed the engine with the cooperation of Prof. A. D. Lewis, of Clemson, the school now has 17 types of engines—from alcohol and

Left to right are Dr. J. H. Sams, dean of engineering department at Clemson, S.C.; A. D. Lewis, gas engines laboratory, and T. E. Thornhill of the Seaboard Gas Co., Charleston and the South Carolina LP-Gas Assn.

kerosene to aircraft jet types. The engine given by the association, however, is the first butane-propane type.

The engine has been coupled to an electric dynamo which can be loaded by a water box. This will enable the students to run calculated tests on the engine under various loads, on gasoline and LPG, and obtain comparative operational curves and data.

The association committee charged with procuring the engine was headed by C. J. Smith.

Kansas Dealer Sells Tractor Conversions On Single Theme—Economy

By GRIER LOWRY

UNLIMITED possibilities for stepping up LP-Gas volume lie in intensive promotion of propane gas for use in tractors on farms, according to J. Lee Laptad, president, Johnson County L-P Gas, Inc., Olathe, Kan.

"We made a slight pass at this big potential source of business last year and the results are very respectable," said Mr. Laptad. "We used a handsome direct mail brochure planned around one theme—economy—always a sound argument with farmers. We made a number of comparisons, giving down-to-earth figures, on LP-Gas tractor carburetion as opposed to gasoline.

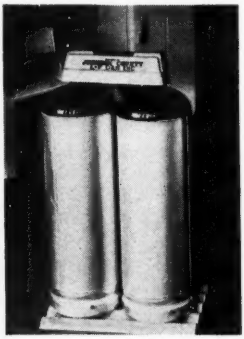
"These three-color, broadside-size double-mailing circulars were sent to 5200 farmers in the territory we cover," he said, "and promotional tie-ups with the direct mail campaign were made in multi-column advertisements in five weekly newspapers in the area. Then, we followed up four weeks later with mimeographed letters with the text following the same line of thought as the circulars.

"In the big circular, we pointed out that a 30 to 50% saving in oil and a 50% reduction in engine repair costs result from using propane gas in tractors. The copy contained several testimonial letters from farmers in the territory who backed us up on those figures. We underscored that gas for tractor fuel could be stored in the same tank used for household purposes.

"The campaign sold a dozen far-

Johnson County L-P Gas, Inc., Olathe, Kan., has a bulk tank on the outskirts of the city with a 30,000-gal. capacity.

mers on the idea of using LP-Gas carburetion. They burn from 2000 to 5000 gallons per season. That may not seem to be an impressive number of customers to result from such a large mailing, but we keep in mind that the habit of using regular gasoline in tractors is deeply rooted, and that farmers are notoriously slow to accept new ideas, no matter how practical. So by getting a dozen farmers started using LP-Gas in tractors last year, we did the spadework for a second aggressive promotion this past spring. The word-of-mouth recommendation for LP-Gas carburetion those 12 farmers will give is worth considerable.



LP-Gas tank showroom-display kindles interest and often leads to extra business.

"We feel that this big hay, wheat and corn territory is a 'natural' for promoting propane gas for use in tractors. Practically every farm houses one tractor; some of the large wheat farms have large fleets. Cultivating this extra source of business will help us build our summer load which is usually lighter because there is no use for heating during the summer months."

Business Developed Rapidly

The Kansas firm, which made its bow in 1946, did $22,000 worth of business and had 30 customers the first year of business. Now the company has over 700 customers spread out over an 8-county area in Missouri and Kansas and last year racked up a $140,000 volume of business. Fifty per cent of the business is derived from the firm's "home" county, Johnson.

The physical setup incorporates a downtown store and a 30,000-gallon bulk plant. Equipment includes a bottle-filling dock, two fuel trucks, and two ¾-ton pick-up trucks used for bottle delivery installations and repair work.

New Oklahoma "U" Book Covers Oil, Gas Production

A book of general interest to the entire oil industry, including liquefied petroleum gas operators, is entitled "Oil and Gas Production." It has been compiled by the Interstate Oil Compact Commission, an association of 20 oil and gas producing states which have executed the Interstate Compact to "conserve oil and gas." It is composed of the governors of these states and their representatives and operates in the public interest to promote better oil and gas conservation programs.

The book is liberally illustrated with photographs and drawings which show ways and means for the efficient recovery of oil and gas and the nature of the reservoirs in which they are found.

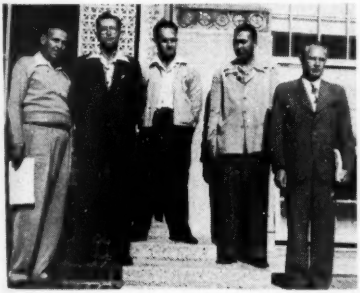
The book is a product of the University of Oklahoma Press, publishing division of the university at Norman, Okla. Its price is $2.75.

All West Coast States Send Men to Service School

The second Western LP-Gas service school was conducted at the University of California, Berkeley, Calif., Aug. 29-31. Cooperating in the preparation and presentation of the school were the Extension Division of the University and the Liquefied Petroleum Gas Assn. In attendance were 79 representatives of LP-Gas distributors and other firms having a direct interest in the industry and coming from California, Nevada, Oregon, and Washington. Henry Haar, of Fresno, Calif., chairman, LPGA District 2 educational committee, and Ben Marsh, LPGA West Coast secretary, were in charge of the arrangements.

BEN A. MARSH

Western Service School students, discussing "customer relations" after a day's session, are (left to right): Bill Masters and Dell Stepp, Klamath Gas Co., Klamath Falls, Ore.; Gene Youngreen and George Glass, Sequoia Gas Co., Fortuna, Calif.; Jay Hulbert, Beuhler Tank & Welding Co., Los Angeles.



One LPG organization — Rockgas Service Co., Inc., El Cajon, Calif. — liked the service school idea so well it sent these five members (left to right): John Jarrett, Drue Harritt, Joe Kunkler, Harold Wright, and Ted Polzin.

Technical talks were given by Oliver Johnson, Standard Oil Co. of Calif.; M. J. Samuelson, Minneapolis-Moline Co.; A. L. Hawley, Jr., William Wallace Co.; Ralph H. Engstrom, The Bastian-Blessing Co.; C. C. Owen, Surface Combustion Corp.; A. W. Beck, Grayson Controls Division, Robertshaw-Fulton Controls Co.; Blair Hughes, Servel, Inc.; and W. H. Christensen, Minneapolis-Honeywell Regulator Co. Pierre Vinet, of the Geo. D. Roper Corp., gave the final talk, which dealt with customer relations.

Highlights from the three-day course:

"The most important operation in

the installation of an appliance is the instruction of the owner in its use and care. He should not only understand the *how*, but also the *why*."—Blair Hughes.

Sources of Freeze-Ups

"The water which causes freeze-ups in regulators may come from any one of three sources. Least common of all is its incomplete removal from the fuel before it leaves the refinery. Occasionally it remains in the tank following the hydrostatic test at the tank factory. The most common cause is from accumulation in hoses which have been exposed to rain or snow."—Ralph H. Engstrom.

"People do things because they want to—not because you want them to. . . . The business of the salesman is to create wants. . . . Man is a walking reservoir of unsatisfied wants. . . . A salesman is one who sells things that won't come back, to people who will.

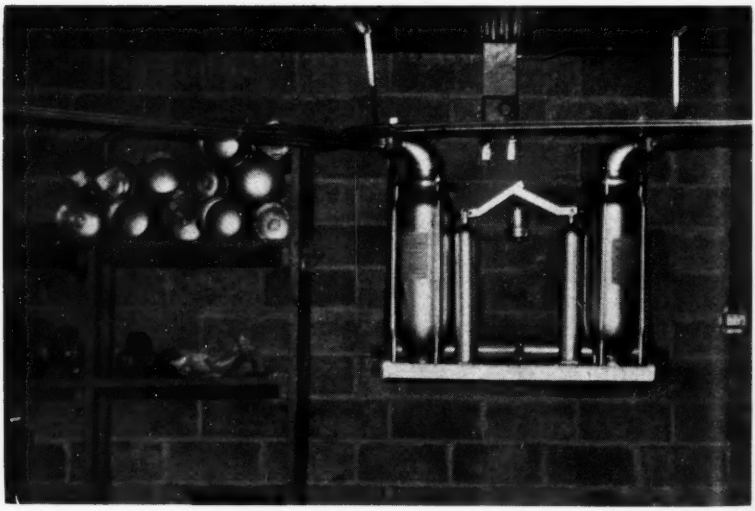
"Ninety percent of the service calls are the result of poor housekeeping.

"The job of cleaning up after a new installation is just as important as making a good first impression. You may feel that you are not hired to use a broom and dust cloth, or even a wash cloth, but . . . that is part of your job."—Pierre Vinet.

Suburban Propane Installs Dry Chemical System

The importance of adequate fire extinguishing equipment to the LP-Gas dealer has led one of the East's largest propane distributors to install a new dry chemical fire fighting system in its 19 plants.

The system was adopted by Subur-



Dry Chemical fire extinguishing equipment installed in plant of Suburban Propane Gas Corp., Whippany, N. J.

ban Propane Gas Corp. of Whippany, N. J., after conducted tests on an indoor propane fire. Company officials opened windows in a cylinder charging room to avoid a possible explosion and piped gas into the room from a cylinder located outside. A blow torch was used as an ignition pilot and constructed so that the flame was shielded, in order to provide ignition repeatedly if the main fire was extinguished.

When the valve was turned on, a flame shot out that was approximately 20 ft. long and 10 ft. wide. The dry chemical system extinguished the fire within nine seconds—so rapidly that the blaze was out before Suburban's fire detection and alarm system gave a warning ring—and so thoroughly that the "shielded" pilot was also extinguished.

Does Not Injure Equipment

Keefe and Co. of Atlanta, Ga., marketers of the dry chemical extinguisher, say that it causes no damage to material, equipment, or delicate machinery, since it is non-abrasive and non-corrosive. It is also stated that it is non-toxic and harmless to employes, even in closed rooms.

The extinguisher requires no periodical recharging and it will not corrode, evaporate, freeze or deteriorate over many years, regardless of temperature or atmospheric conditions, according to the manufacturer.

The fixed, or stationary system is actuated by a "rate of rise" mechanism that drops a weight which, in turn, trips a valve-actuating arm. Carbon dioxide from a cylinder pressurizes the dry chemical container and forces the chemical through dispersal tubes at high velocity. The tubes are routed to critical points throughout a given plant.

The systems may be recharged, serviced and inspected by responsible employes at the plant in which they are adopted. Originally developed to cope with concealed fires in textile factories, the fixed systems are marketed along with portable extinguishers employing the same general principle and which Keefe and Co. state are applicable to the LP-Gas industry.

Paul Revere Honored By Company He Founded

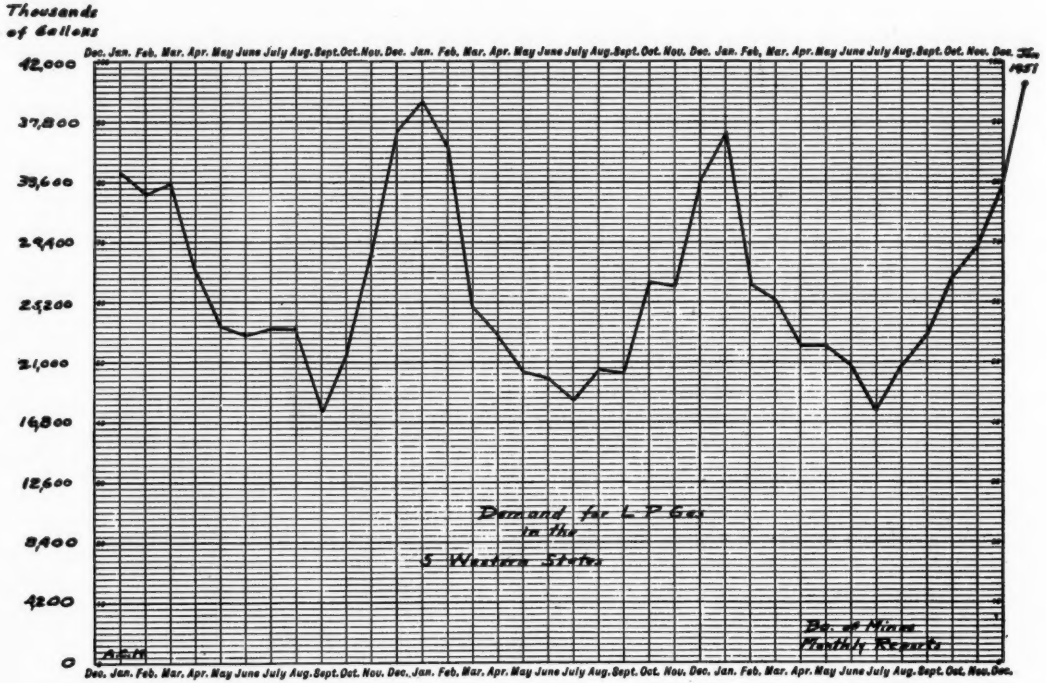
One hundred and fifty years ago, Paul Revere erected at Canton, Mass., the first successful copper rolling mill in America. This anniversary date has been commemorated by that company's successor, Revere Copper & Brass, Inc., in a 48-page booklet.

According to J. J. Russell, president of Revere, not only should Paul Revere be remembered and honored for his part in the American Revolution and his famous ride, but for his industrial pioneering.

Brings History Down to Date

The book, covering the growth and history of Revere Copper & Brass, is also a story of the growth and history of America. In 1928 six companies—Rome Brass & Copper Co., Michigan Brass & Copper Co., Higgins Brass & Manufacturing Co., Baltimore Copper Mills, Dallas Brass & Copper Co., and Taunton-New Bedford Copper Co. (originally the Revere Copper Co., the Taunton Copper Manufacturing Co., and the New Bedford Copper Co. before the three consolidated)—merged and eventually bore the name Revere Copper & Brass Inc., to perpetuate the name Revere.

Today, E. H. R. Revere, great grandson of the founder of the copper industry in America, is a director of Revere Copper and formerly was vice president of the Taunton-New Bedford Copper Co.


Thousands of Gallons
42,000
37,800
33,600
29,400
25,200
21,000
16,800
12,600
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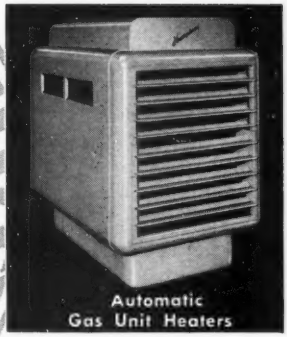
Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. 1951
Demand for L.P Gas in the 5 Western States
Dept. of Mines Monthly Reports
A.E.H
Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec. Jan. Feb. Mar. Apr. May June July Aug. Sept. Oct. Nov. Dec.
Year of 1948
Year of 1949
Year of 1950
Total Demand & Losses 324,256,000 gals. 311,808,000 gals 306,138,000 gals.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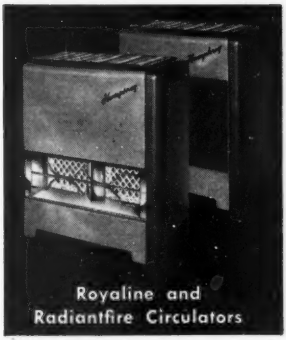
Gas Unit Heaters

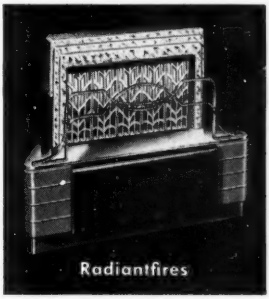
Humphrey GAS HEATERS . . .

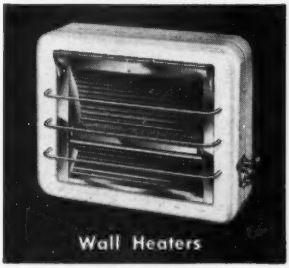
unsurpassed for Style . . . Economy . . . Performance

Humphrey Gas Heating equipment is backed by a 50-year tradition of quality. Because this company has been building gas heating equipment *exclusively* for more than half a century, you can sell Humphrey products with confidence that there is no finer equipment made.

GENERAL GAS LIGHT COMPANY
KALAMAZOO, MICHIGAN


Royaline and
Radiantfire Circulators


Radiantfires


Wall Heaters

The Trade

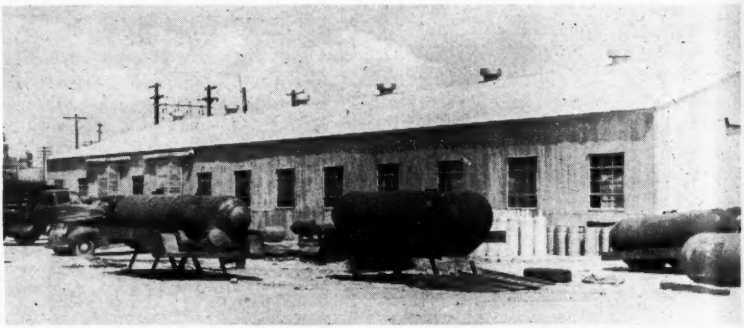
A new orifice meter plant with display rooms has been opened in Dallas, Texas, by the **American Meter Co.** Orifice plates, flanges, needle valves, fittings, and gauge line connections will be produced also.
Under the management of Donald C. Holtz, the new plant will provide engineering consultation on instrument problems. Exhibitions of the company's complete line and live demonstrations for customers, special instrument maintenance personnel, and other interested groups or individuals will be provided.

In order to facilitate the handling of customers' orders and speed up deliveries, **Ensign Carburetor Co.** has moved its sales department from the main manufacturing plant in Huntington Park to its newly opened Plant No. 3 at 3220 E. Olympic Blvd, Los Angeles.

Stockroom, assembly, order and shipping departments have previously been installed in the new location. All company mail is still being received through P. O. Box 229, Huntington Park, Calif

Specially built machinery including a welding positioner which puts tanks into position for an automatic, roundabout and longitudinal weld, is featured in the expansion program of **North Texas Tank Co.**, which has added a 50 x 175-ft. fabricating plant —more than doubling company production of twin-barrel truck units.

The Denton, Texas, firm has enlarged its plant and office facilities to meet increasing demands for its production-line built truck units, mo-



New plant of North Texas Tank Co., Denton, Texas.

tor fuel tanks, and domestic and tractor tanks, according to Elwood Allen, company president.

The new plant houses domestic tank production, the old plant now being devoted to construction of the company's other types of tanks.

The welding positioner, air-adjusted and hydraulic-electrically driven, is adjustable to sizes and diameters from 12 to 30 in. and in lengths from 12 to 84 in. Other new machinery includes a hyraulic fit-up fixture which presses the tank heads into the shells, handling tank lengths from 12 to 84 in.; also a straight seam welder, which automatically welds a straight seam inside and out, insuring 100% welding penetration. It handles tank diameters of 16 in. through 46 in.

The Kansas City, Mo., office of **Surface Combustion Corp.** has moved from 1438 Dierks Bldg. to the Kansas City Merchandise Mart, 2201 Grand Ave., in the same city.

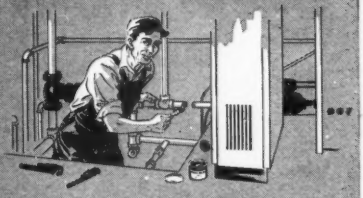
HENRY SAFFORD

Recently completed were transactions involving the purchase of the assets of Grayson - Greenamyer, Inc., Monrovia, Calif., by the **General Controls Co.**, of Glendale, Calif.

The newly-formed Grayson-Greenamyer appliance controls division plant will be managed by Richard Grayson, formerly president of Grayson-Greenamyer; George Greenamyer has been named works manager; and John Grayson will be retained as director of research and development.

J. F. Ray, vice president in charge of sales for General Controls, has

POSITIVELY PREVENTS
DANGEROUS, COSTLY LEAKS ON ALL L-P GAS CONNECTIONS



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TRY A FREE SAMPLE OF
"JOHN CRANE"
PLS

This Underwriters' approved compound will be the solution to all your sealing problems.

Many bulk plant operators have standardized on it . . . it saves them money by preventing costly leaks and eliminating maintenance.

PLS is an *all-purpose* sealing compound. It is insoluble in a wide variety of services, including any petroleum liquid or gas, and it seals effectively at temperatures to 550° F and pressures to 6000 psi.

PLS never hardens...which means easy dis-assembly even after years of service...on underground or outdoor connections in all weather conditions.

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PACKINGS AND MECHANICAL SEALS
CRANE PACKING COMPANY
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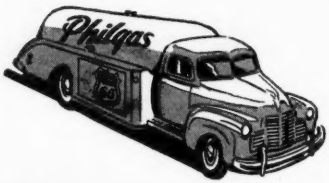
Offices in All Principal Cities in United States and Canada

INCREASE YOUR PROFITS WITH THE PHILGAS

5-WAY PROFIT PLAN!



Phillips 66 Philgas

1. High Quality Product

2. Dependable Supply

3. Experienced Engineering

4. Effective Marketing Help

5. Operational Assistance

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Offices located in Amarillo, Tex., Atlanta, Ga., Chicago, Ill., Denver, Colo., Des Moines, Ia., Pontiac, Mich., Indianapolis, Ind., Kansas City, Mo., Milwaukee, Wis., Minneapolis, Minn., New York, N. Y., Omaha, Nebr., Raleigh, N. C., St. Louis, Mo., Tulsa, Okla., Wichita, Kan.

Congratulations are in order following purchase of Grayson-Greenamyer, Inc., by General Controls Co., Glendale, Calif. Left to right: Richard Grayson, William Ray, John H. Grayson, J. F. Ray, and George Greenamyer.

announced the appointment of Henry B. Safford, Jr., as advertising and sales promotion manager.

New factory branch office manager for the company in Columbus, Ohio, is Joseph Fallon, formerly in charge of the Cincinnati office. New offices for the company in Columbus are at 81 E. State St.

William J. Leonard has been appointed eastern division sales promotion manager of the **Florence Stove Co.**, Gardner, Mass., according to G. A. Quinland, manager of the company's eastern division. Mr. Leonard, replacing F. X. Hamilton, who resigned recently, will headquarter at the company's New York City office. He will work directly with Florence distributors, dealers, and salesmen in the eastern sales territory

E. C. Marsh has resigned as president of the Fort Wayne Div. of **Bowser, Inc.**, after 42½ years with the company. Following his resignation, company directors elected J. P. Orchard, executive vice president, to the presidency. Mr. Marsh will con-

tinue to serve as a member of the board of directors.

Mr. Orchard formerly served the company as controller and treasurer.

WENTWORTH SMITH

Neptune Meter Co., New York, has named Wentworth Smith as general sales manager. Formerly he had been assistant general sales manager.

In his new position Mr. Smith will be assisted by Walter H. Sieger.

Mr. Sieger, a member of the liquid metering committee of the LPGA, will be in charge of the sale of "Red Seal" petroleum and industrial meters.

HAROLD TILEY

The appointment of Harold Tiley as general sales manager of the **Caloric Stove Corp.** has been announced by Julius Klein, president.

Mr. Tiley, who joined Caloric in 1929, has been the company's field manager for the past two years. He has also served the Philadelphia firm as assistant sales manager and northeastern divisional sales manager.

Gilbert T. Bowman, formerly in charge of sales and service in the San Francisco branch office of **Rockwell Manufacturing Co.**, has been named sales manager of gas prod-

THE NEWEST IN GAS HEATERS BY THE OLDEST STOVE FACTORY IN THE U.S.A.

Stiglitz

WARM-AIRE Gas Heaters

Outstanding Features: Triple Heat Exchanger; Stiglitz "Blue-Streak" Burner; advanced styling. Fully automatic control and directional blower available at extra charge. *Catalogue on Request.*

STIGLITZ

FURNACE & FOUNDRY CO., INC.
LOUISVILLE 3, KY.

THE NEWEST IN GAS HEATERS BY THE OLDEST STOVE FACTORY IN THE U.S.A.

Liquefied Petroleum Gas

Cities Service Oil Co.

•

A DEPENDABLE SOURCE
UNIFORM PRODUCTS
A CAPABLE SUPPLIER
TWENTY YEARS' EXPERIENCE

•

IN LP GAS ALSO
CITIES SERVICE
MEANS
GOOD SERVICE

•

CITIES SERVICE
OIL CO.
(Del.)

•

BARTLESVILLE, OKLA.
CHICAGO, ILL.

Other Sales Offices
Cleveland — Kansas City
St. Paul — Toronto

ucts, according to L. A. Dixon, vice president of the company's meter and valve division

H. Boezinger, West Coast sales manager of Rockwell, has appointed Robert B. Kitzmiller as manager of the San Francisco office, succeeding Mr. Bowman. Mr. Kitzmiller has served Rockwell in various sales capacities since 1934.

FRANK TOLER

Frank Toler has been named sales manager of the gas appliance division of **Temco, Inc.**, according to a recent announcement from W. Bratten Evans, Temco president.

Mr Toler, formerly with the Norge division of Borg-Warner Corp., will supervise the national sales of the company's heating equipment and clothes dryers.

Mel Pearson, Denver, has been appointed representative for Temco gas appliances in the Rocky Mountain territory.

D. A. LAWSON

F T. Herron, president of **Herron Stove & Foundry Co.**, Nashville, Tenn., has announced the appointment of D. A. Lawson as sales manager, gas appliance division.

Mr. Lawson was for many years with Temco, Inc., where he devoted much of his time to conduct-

ing sales and service meetings among dealers and distributors. He has also instructed at butane-propane service schools throughout the country.

A. H. BANKO

Alex H. Banko has been appointed director of sales for **Payne Furnace Div., Affiliated Gas Equipment, Inc.,** Monrovia, Calif.

Mr. Banko, while with the Bryant Heater Div., AGE, was sales manager of the northeastern Ohio area, Western sales manager, and manager of the company's Cleveland sales branch.

Dr James F. Eversole has been named manager of research administration of **Union Carbide & Carbon Corp.,** according to Dr. George O. Curme, Jr., vice president in charge of research.

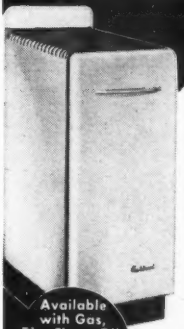
Dr. Eversole will help coordinate the research activities of the corporation. He has been with the company since 1929. Since 1944 he had been superintendent of the laboratories of the Linde Air Products Co. division of Union Carbide.

John C. Pitman who passed on Aug. 29 at his summer home in Alfred, Maine, at the age of 75, was a prominent figure in the food service equipment industry for many years.

A native of Yarmouth, N. S., he was a resident of Saugus, Mass., for 50 years. He was head of John C. Pitman & Sons, manufacturers of "Pitco Frialators" for 20 years and was one of the pioneers in kitchen equipment. He perfected one of the first deep fat fryers and developed the frialator which has become widely known in the food service industry.

It's New!

Burns Either City GAS or Bottled GAS



Oakland's

New Gas Kitchen Heater makes BUYERS out of LOOKERS

Available with Gas, Blue Flame Oil, Pot Type Oil, or 3-Type Solid Fuel Firebox

25,000 BTU's crowded into barely two square feet of floor space.

Top griddle surface makes dandy auxiliary cooking area for pancakes or chops.

. . . and because it's an Oakland, here's quick capacity for

HEAT
***More* HEAT**
***and More* HEAT**

. . . and THAT'S what your customers come to buy!

SEND for full information on the Complete Oakland line!
Oakland Foundry Co. Belleville, Ill.
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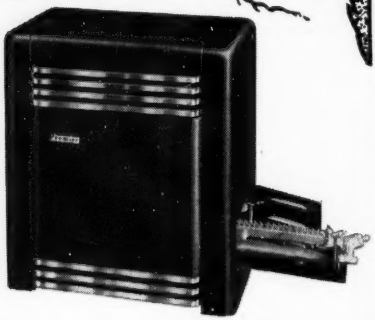
Without obligation, please send me FREE information on Oakland Kitchen Heaters and Oakland Circulating Heaters.

Name_____
Address_____ State_____
City_____

Oakland Foundry Co.



The New PREMIER Vented Heaters

Premier points the way to faster turnover . . . bigger profit! Four beautiful, brown porcelain enamel, trimmed in chrome models. 15,000 B.T.U. to 40,000 B.T.U. Efficient cast iron burner easily removed for cleaning, if necessary . . . AN EXCLUSIVE **Premier** feature! All A.G.A. approved. Equipped with 100% cut-off safety pilot for L.P. gas.

Premier
SINCE 1912
STOVE COMPANY
100 SOUTH SIXTEENTH STREET
BELLEVILLE, ILLINOIS

DON McNALL

AL CATES

Don McNall, Dallas, Purchases L. C. Roney, Inc.

The purchase by Don McNall, of Dallas, Texas, of the firm of L. C. Roney, Inc., of Inglewood, Calif., manufacturers since 1935 of a complete line of liquefied petroleum gas control equipment, has been announced. This company was formed originally by L. C. Roney who sold his interests to Southwestern Development Co., of Los Angeles, in 1946.

The name of the company has now been changd from L. C. Roney, Inc., to Roney Inc. There will be no other radical changes in the organization or manufacturing procedures, according to Mr. McNall, except that headquarters of the company will be moved from Inglewood to Dalls.

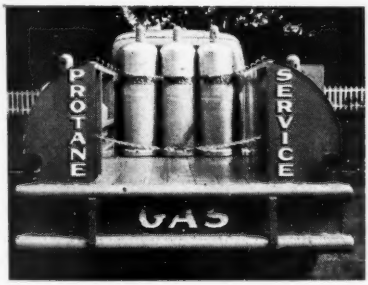
Mr. McNall has been Dallas district manager of L. C. Roney, Inc., for the past two years. Prior to joining the company he was for a number of years with Rochester Manufacturing Co., manufacturers of the "Criterion" float gauge for the LP-Gas industry. He has also served as branch manager of the Protane Corp., of Erie, Pa., and as a dealer for the Pyrofax Gas Co., a division of Carbide Carbon and Chemical Corp.

Al Cates, sales engineer of L. C. Roney, Inc., in the Dallas district for

the past two years has been named director of sales and service for the new company. He was associated with Corken's, Inc., before joining Roney, and prior to that was propane designing engineer for Black, Sivalls & Bryson.

C. N. Postal, who has been retained as Pacific Coast district manager of the company, has been with L. C. Roney, Inc., for many years and is well known in the industry nationally as he has traveled in all sections of the country. Mr. Postal will maintain headquarters at 5931 South Van Ness Ave., Los Angeles.

The new headquarters of Roney, Inc., is located at 105 Cole St., Dallas, in the Trinity Industrial Area where adequate warehouse and shipping facilities are maintained.



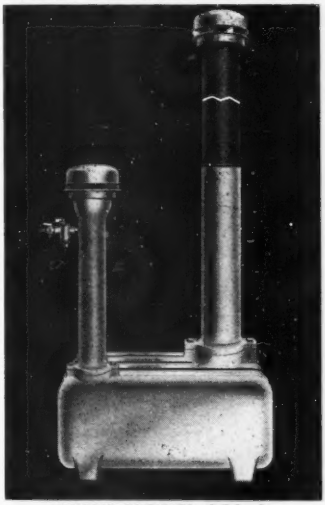
Rear view of Protane Corp.'s specially designed cylinder delivery truck.

Protane Corp. Designs New Cylinder Delivery Trucks

The Protane Corp., one of the oldest marketers of liquefied petroleum gas in the U. S., has augmented its truck fleet with purchase of 38 new units.

H. K. Strickler of the Erie, Pa., firm, custom designed the new trucks

NEW ADVANTAGES!



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Blu-blaze

STOCK TANK HEATER

- Constant high efficiency assured by BLUE-BLAZE Draft Caps
- Factory burner adjustments simplify sales and installation
- Efficient drilled port, cast iron, Venturi type burner—18,000 BTU capacity
- Automatic controls optional

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BUTANE-PROPANE News

198 S. Alvarado St., Los Angeles 4, Calif.

W. J. Malchiodi, Protane's sales manager, about to depart in the company's new plane on a Western trip.

to provide a more efficient handling of cylinders and installation equipment. Most of the new Protane units are Model F-4 Ford 1½-ton jobs, capable of holding 24 100-lb. cylinders, four 20-lb. cylinders and an ample supply of installation equipment, plus the necessary tools.

The flexibility of the design makes it practical for use with larger capacity trucks if desired. However, the length and weight of the F-4 model adds to the maneuverability of the unit.

Many of the features in Mr. Strickler's design have been adopted as standard by the LP-Gas industry.

With the addition of the new vehicles, Protane now has more than 200 trucks of various capacities available for delivery and installation service and 42 tank trucks for bulk shipment to Protane's own districts and to the bulk plants of their distributors.

Besides its highway rolling stock, Protane's transportation facilities include 22 railroad tank cars.

The Protane Corp. has acquired a new 4-place airship for the use of its officials traveling to the company's branches located in 25 states.

According to H. N. Forman, com-

pany president, the plane was purchased because "it saves time, and, when the transportation of two or three officials at one time is necessary, it saves money as well."

The ship is a model "195" Cessna and will accommodate, besides the pilot, three passengers. It is fully equipped for instrument flying. Equipment includes three radio units, one of which is an automatic direction finder.

Inert Atmosphere Produced With LPG

The production of "inert atmosphere" for various industrial and chemical applications and for the protection of various food and industrial products against losses or depreciation due to oxidation, offers an increasing market for LP-Gas.

"Inert atmosphere" is merely air, from which all of the oxygen has been burned. It is applicable wherever nitrogen or carbon dioxide has been used in the past to prevent dust explosions, to prevent rancidity or loss of quality due to oxidation in the storage of foodstuffs, and to prevent the formation of "skins" or crusts due to oxidation of paint, printer's ink, etc., after the cans have been opened and the product partly used.

Can Distribute by Pipe Line

The inert atmosphere is produced by burning air and gas together in a balanced mixture, so that all of the fuel and all of the oxygen in the air combine to form either carbon dioxide or water vapor. The water vapor is then removed by condensation, leaving an atmosphere consisting of about 87% nitrogen and 13% carbon dioxide. The inert atmosphere may be used where it is produced, piped like any other utility gas from a

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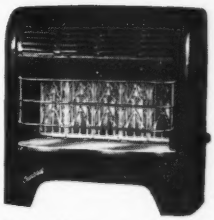

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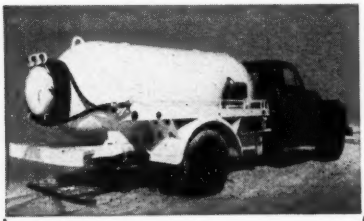

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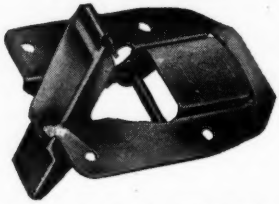

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central plant to various industrial applications or compressed into cylinders.

Equipment for the production of inert atmosphere has been designed and developed by John H. Jacobs, of Oakland, Calif., and built by Ransome Co., Emeryville, Calif. The final product is called "Noxgas." While the process is still quite new, various tests show a widespread and valuable range of applications.

A test of the product has been conducted in the storage of powdered milk to prevent rancidity, in comparison with nitrogen and pure carbon dioxide. After a year's storage, the quality of the milk was the same with all three gases. There was no rancidity, and no foreign flavor. Cost of the three gases was as follows:

Nitrogen: $.70 per 100 cu. ft.

Carbon dioxide: $.35 per 100 cu. ft.

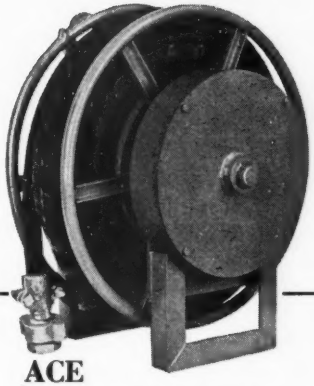
Inert atmosphere: less than $.10 per 100 cu. ft.

Similar results are to be expected in the storage of vegetable oils and other food products.

The first of the commercial-scale units has been installed by the Pacific Guano and Fertilizer Co., Berkeley, Calif., to prevent dust explosions. The inert atmosphere is fed into the grinding mills working on sulphur and other products which produce highly explosive dusts. This dilutes the air surrounding the dusts to the point that the percentage of oxygen is too low to permit combustion.

The process is applicable to any kind of grinding or milling operation in which there is a hazard of dust explosions, including flour mills, alfalfa grinding, powdered milk, dry grinding in mining operations, etc.

Production of the inert atmosphere is at the rate of 450 cu. ft. per gallon of LP-Gas. The plant now in use at Berkeley can be regulated to produce any desired amount.



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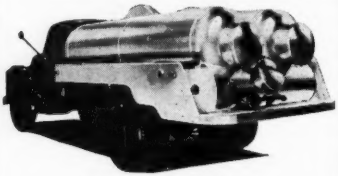

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Suburban Propane Opens 40th Office at West Grove, Pa.

Suburban Propane Gas Corp., Whippany, N.J., has announced the opening of a new district office and bulk plant in West Grove, Pa. Mark Anton, president, states that the new plant will provide propane gas service within a radius of approximately 30 miles of West Grove and will consolidate Suburban Propane's East Coast coverage. The new operation brings the company's district plant total to 40.

The West Grove plant has been erected on a four-acre plot purchased early this year. The main building provides office facilities and a gas appliance showroom. The new plant also includes a 30,000-gallon storage tank, pump house, loading dock, cylinder charging building and warehouse facilities in the lower level of the main building.

The southern sector of the new district's marketing area formerly was served by Suburban Propane's district offices at Dover, Delaware, and Chestertown, Md.

Parker Hudson, formerly manager of the Chestertown district, has been appointed manager of the new West Grove district.

Suburban Propane has also opened new facilities for its Leonardtown district operations, according to David M. Stavely, district manager.

Suburban purchased the business, the former Love Gas Co., last fall and has been operating it from the Love facilities.

Mr. Stavely also reported that the company has relocated three bulk storage tanks from the nearby Love property and has erected a propane cylinder charging room and loading dock. Benedict B. Love, Jr., former owner of the business continues to represent Suburban Propane as an authorized appliance dealer.